

**Final
Technical Memorandum (Rev. 3)
Estimation of Background
Concentrations in Soil, Sediment, and
Surface Water in the Coeur d'Alene
and Spokane River Basins**

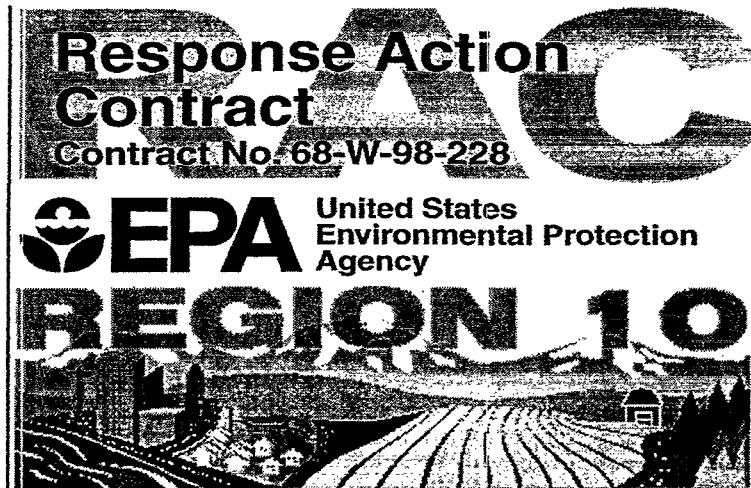
October 2001

URS Greiner
in association with
CH2M HILL
White Shield, Inc.

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**FINAL
TECHNICAL MEMORANDUM (REV. 3):
ESTIMATION OF BACKGROUND CONCENTRATIONS
IN SOIL, SEDIMENT, AND SURFACE WATER IN THE
COEUR D'ALENE AND SPOKANE RIVER BASINS**

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October 5, 2001

Production Note

After completion of the Ecological Risk Assessment, a mathematical oversight was identified in the calculation of the upper confidence limit (UCL) for the geometric means of the background sediment data for the Upper Basin, Lower Basin, and Spokane River Basin. The corrected UCLs change by approximately 10 percent or less. These changes do not affect risk estimates in the Upper Basin. This oversight is considered to have an insignificant impact on risk estimates in the Lower Basin and Spokane River Basin. Therefore, while this oversight has been addressed in this document, the risk assessment will not be reissued. The draft version of this document (which did not contain Appendices C and D) is included in the Final Ecological Risk Assessment as Appendix B.

EXECUTIVE SUMMARY

The Coeur d'Alene Basin remedial investigation and feasibility study (RI/FS), in part, identifies areas that are contaminated by mining wastes. To identify contaminated areas, it is first necessary to establish a range of background concentrations for each chemical of potential concern in soils, sediments, and surface water. A regulatory basis for determining background concentrations of metals or other naturally occurring hazardous substances at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites is given in Section 104(3)(a) of CERCLA, which states in part that "*The President shall not provide for a removal or remediation action under this section in response to a release or threat of a release of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes and phenomena, from a location where it is naturally found.*"

Chemicals of potential concern identified in the RI included the following ten metals: antimony, arsenic, cadmium, copper, iron, lead, manganese, mercury, silver, and zinc. For the purpose of the RI/FS, background is considered to be the concentration of a substance in environmental media that are not contaminated by the sources being assessed. Background concentrations are due to naturally occurring substances and other anthropogenic metals sources unrelated to mining (e.g., leaded gasoline emissions from cars). Background concentration ranges include natural enrichment from ore deposits. This Technical Memorandum is the supporting documentation for the selection of appropriate ranges of background concentrations for each of the ten metals identified in the RI/FS.

The evaluation of background concentrations began with a review of published information or studies (including data gathered in the RI) that addressed background in the Basin. The Basin, which collectively refers to the Coeur d'Alene and Spokane River Basins, was then divided into three geographic areas: the Upper Basin (South Fork Coeur d'Alene River and its tributaries, Beaver Creek, and Prichard Creek, or conceptual site model units 1 and 2), the Lower Basin (Lower Coeur d'Alene River from Kingston to Harrison, the associated floodplain, and Coeur d'Alene Lake, or conceptual site model units 3 and 4), and the Spokane River Basin (from the city of Coeur d'Alene to the Spokane Arm of Lake Roosevelt on the Columbia River, or conceptual site model unit 5). These three areas are shown in Section 1 (Figure 1-1). Each area was evaluated separately to establish background concentration ranges for each of the 10 metals as appropriate.

Based on a review of existing studies, sufficient information was available to define background concentration ranges in Upper Basin soils. The existing studies, however, were found not to be adequate to establish background ranges for all 10 metals in Upper Basin sediments, Lower Basin sediments, Spokane River Basin sediments, and surface water. Consequently, data

collected for the RI/FS reports (sediments and surface water) and by the Washington Department of Ecology (limited to Spokane River Basin soils) were analyzed to develop additional information on background concentrations. The results of these additional analyses compare favorably with existing studies reviewed.

The upper bounds of the selected background concentration ranges for the 10 metals are presented in Table ES-1. These upper bounds represent an estimated upper limit of the range of background concentrations for each metal in by media type and geographic area.

Table ES-1
Selected Upper Bound on Background Concentration Ranges for Metals in the Basin

Media ^{a,b}	Antimony	Arsenic	Cadmium	Copper	Iron	Lead	Manganese	Mercury	Silver	Zinc
Upper Coeur d'Alene River Basin										
Soils	5.8	22	2.7	53	65,000	171	3,597	0.3	1.1	280
Sediments	3.3	13.6	1.56	32.3	26,000	51.5	1,210	0.179	1.1 ^c	200
Lower Coeur d'Alene River Basin and Coeur d'Alene Lake										
Sediments	1.63	12.6	0.678	25.2	27,600	47.3	325	0.179 ^d	0.324	97.1
Spokane River Basin										
Sediments	1.63 ^e	9.34	0.72	23.9	25,000	14.9	663	0.032	0.324 ^e	66.4
Coeur d'Alene River and Spokane River										
Surface Water	2.92	0.91	0.38	1.48	46.8	1.09	20.4	0.66	0.14	24.2

^a All soil and sediment concentrations in mg/kg (parts per million); all surface water concentrations in µg/L (parts per billion).

^b Data sources:

- Upper Basin Soils: 90th percentile from Gott and Cathrall (1980) data
- Upper Basin sediments: 90th percentile estimated from remedial investigation/feasibility study data (USEPA 2000)
- Lower Basin sediments: 90th percentiles estimated from remedial investigation/feasibility study data (USEPA 2000)
- Spokane River Basin sediments: 90th percentile of Ecology soil background data (WDOE 1994)
- Surface water: 95th percentile estimated from RI/FS data (USEPA 2000)

^c A range of background concentrations for silver in Upper Basin sediments could not be estimated because most values were below detection limits. Therefore, the range for silver in soil has been selected recognizing that these values are biased high.

^d A range of background concentrations for mercury in Lower Basin sediments could not be estimated because most values were below detection limits. Therefore, the range for mercury in Upper Basin sediments has been selected recognizing that these values are biased high.

^e No Ecology data were available for antimony and silver in Spokane River Basin sediments. Therefore, the Lower Basin sediment ranges were selected recognizing that these values are biased high.

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FINAL BACKGROUND TECH MEMO (REV. 3)

Coeur d'Alene Basin RI/FS
RAC, EPA Region 10
Work Assignment No. 027-RI-CO-102Q

Abbreviations and Acronyms
Date: 10/05/01
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ABBREVIATIONS AND ACRONYMS

Basin	Coeur d'Alene and Spokane River Basins
CaCO ₃	calcium carbonate
Cal/EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFD	cumulative frequency distribution
COPC	chemical of potential concern
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
FSP 8	field sampling plan No. 8
IDEQ	Idaho Department of Environmental Quality
µg/L	microgram per liter
mg/kg	milligram per kilogram
MTCA	Model Toxics Control Act
RI/FS	remedial investigation/feasibility study
UCL	upper confidence limit
URSG	URS Greiner, Inc.
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency (abbreviation used in reference citations)
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDOE	Washington State Department of Ecology (abbreviation used in reference citations)

1.0 INTRODUCTION

More than 100 years of mining, milling, and ore processing in the Coeur d'Alene Basin have resulted in extensive areas being contaminated with metals. The residual tailings, waste rock piles, surface-water runoff from tailings piles into streams and rivers, and use of tailings in construction activities have distributed contaminants into areas where ecological and human receptors are exposed.

A primary purpose of the Coeur d'Alene Basin remedial investigation/feasibility study (RI/FS) is to identify areas within the Coeur d'Alene and Spokane River Basins (collectively referred to as the Basin) that are contaminated by mining wastes. For the purpose of the RI/FS, background is considered to be the concentration of a substance in environmental media that are not contaminated by the sources being assessed. Background concentrations are due to naturally occurring substances and other anthropogenic metals sources unrelated to mining (e.g., leaded gasoline emissions from cars). In a large geologically complex site like the Basin, background concentrations are expected to vary with geographic location, and are better described by a range of concentrations for a given area rather than a single point concentration. Therefore it is desirable to identify a range of background concentrations for each metal of concern.

A regulatory basis for determining background concentrations of metals or other naturally occurring hazardous substances at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites is given in Section 104(3)(a) of CERCLA, which states in part that *"The President shall not provide for a removal or remediation action under this section in response to a release or threat of a release of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes and phenomena, from a location where it is naturally found."*

In the Basin, ecological and human receptors tend to be more densely located in areas where sediments are deposited. However, many of the samples used in the determination of background concentrations have been collected in upland soils (e.g., Gott and Cathrall 1980). This document addresses the appropriateness of using background concentrations estimated from soil samples as background concentrations for sediments. To address identified data gaps, background concentration ranges and summary statistics for sediments and surface water in the Basin have been estimated from data collected for the RI/FS reports (USEPA 2000a, 2000b) and are presented in this document.

1.1 OBJECTIVES

The three primary objectives of this technical memorandum are as follows:

- Review existing studies, data, and information on background concentrations of chemicals of potential concern (COPCs) in the Basin, and identify data gaps
- Estimate sediment background COPCs concentration ranges for areas of the Basin where data gaps exist, using data collected for the RI/FS
- Select ranges of background concentrations for COPCs in potentially affected media in the Coeur d'Alene River Basin, Coeur d'Alene Lake, and Spokane River Basin

1.2 CHEMICALS OF POTENTIAL CONCERN

This document identifies background concentration ranges in soils and sediments for the following 10 COPCs:

- Antimony
- Arsenic
- Cadmium
- Copper
- Iron
- Lead
- Manganese
- Mercury
- Silver
- Zinc

This list includes eight metals and two metalloid elements, arsenic and mercury. The 10 COPCs will be referred to collectively as metals in this technical memorandum.

1.3 GEOGRAPHIC AREAS APPROACH TO DATA ANALYSIS

The Coeur d'Alene and Spokane River Basins cover a large diverse geographic area. The mountainous eastern portion of the Basin is highly mineralized and characterized by high rates of erosion. Farther west and downstream along the lower Coeur d'Alene River and into

Coeur d'Alene Lake, sediment deposition is a major consideration. West of the lake, most areas of the Spokane River can be generally characterized as erosional, except for areas behind hydroelectric dams.

Given the mineralization of the Basin, it may not be appropriate to use nationally published numbers for background metal concentrations. It may also not be appropriate to develop a point estimate for the background concentration of a metal. Considering the large geographic area and diversity of the Basin, a range of concentrations rather than a single-point estimate is considered a more accurate expression of background for a given metal.

To account for mineralization and erosion/depositional characteristics in the Basin, background concentrations were developed for three distinct geographic areas, as shown in Figure 1-1. The geographic areas are defined as follows: the Upper Basin (South Fork Coeur d'Alene River, its tributaries, Beaver Creek, and Prichard Creek); the Lower Basin (Lower Coeur d'Alene River from Kingston to Harrison, the associated floodplain, and Coeur d'Alene Lake); and the Spokane River Basin (from the city of Coeur d'Alene to Lake Roosevelt on the Columbia River).

Coeur d'Alene Lake was included in the Lower Basin because the Coeur d'Alene Basin is the source of the majority of metals enrichment. Because the Lake also receives sediment from non-mineralized drainages, its inclusion with the Lower Coeur d'Alene River is expected to result in the selection of background COPC concentration ranges that may be biased high.

1.4 ENVIRONMENTAL MEDIA EXAMINED AND STATISTICAL TERMINOLOGY

Several types of environmental media have elevated levels of COPCs in the Basin. Affected or potentially affected media types include soil, sediment, surface water, and groundwater. Of these media types, soils, sediments, and surface water are of primary concern because of the potential for exposure to human and ecological receptors. These three media types are examined for the purpose of determining background COPC concentrations in this Technical Memorandum.

Previous studies in the Coeur d'Alene Basin differ in their treatment of background concentrations in soils and sediments. In some cases background concentration ranges for soils and sediments are examined separately (e.g., Horowitz et al. 1993, LeJeune and Cacela 1999, Kennedy 1960), while in other cases a soil and sediment data have been pooled to develop a single set of background values for both media types (e.g., LeJeune and Cacela 1999). The distinction between soils and sediments is often variable and there is a degree of overlap in the

definition of the terms. The choice of definition is often a function of the scientific discipline involved (USDA 1975, USEPA 1993, USFWS et. al 2000).

For the purpose of this technical memorandum, soils are considered by the U.S. Environmental Protection Agency (EPA) to be the naturally deposited materials, typically found in upland areas, that have not been transported and deposited by fluvial processes. Sediments are naturally deposited materials found in floodplains, riparian areas, and aquatic environments that have been transported by fluvial erosional processes. Surface water includes, as the term implies, still or flowing waters found above the ground. Previous studies of the Basin by LeJeune and Cacela (1999) have examined background concentrations in alluvium, a depositional mixture of sediments. The terms sediment and alluvium are considered by EPA to be synonymous in this technical memorandum.

Information on background concentrations was evaluated for the listed media types in the geographic areas of the Basin previously described as follows:

- Soil: Upland areas of the Upper Basin
- Sediment: Floodplain areas and aquatic and riparian habitats in the Upper Basin, the Lower Basin, and the Spokane River Basin
- Surface water: The Basin as a whole

Background concentrations are described using statistical terms such as average (mean, geometric mean), median, the upper confidence limit (UCL) of the mean, the r^2 value of the data set, percentiles of the data distribution, and the upper tolerance limit of the data distribution. These terms have been used in the previous studies of background COPC concentrations in various media types, and are used in the presentation of the results of the analyses prepared as part of this technical memorandum.

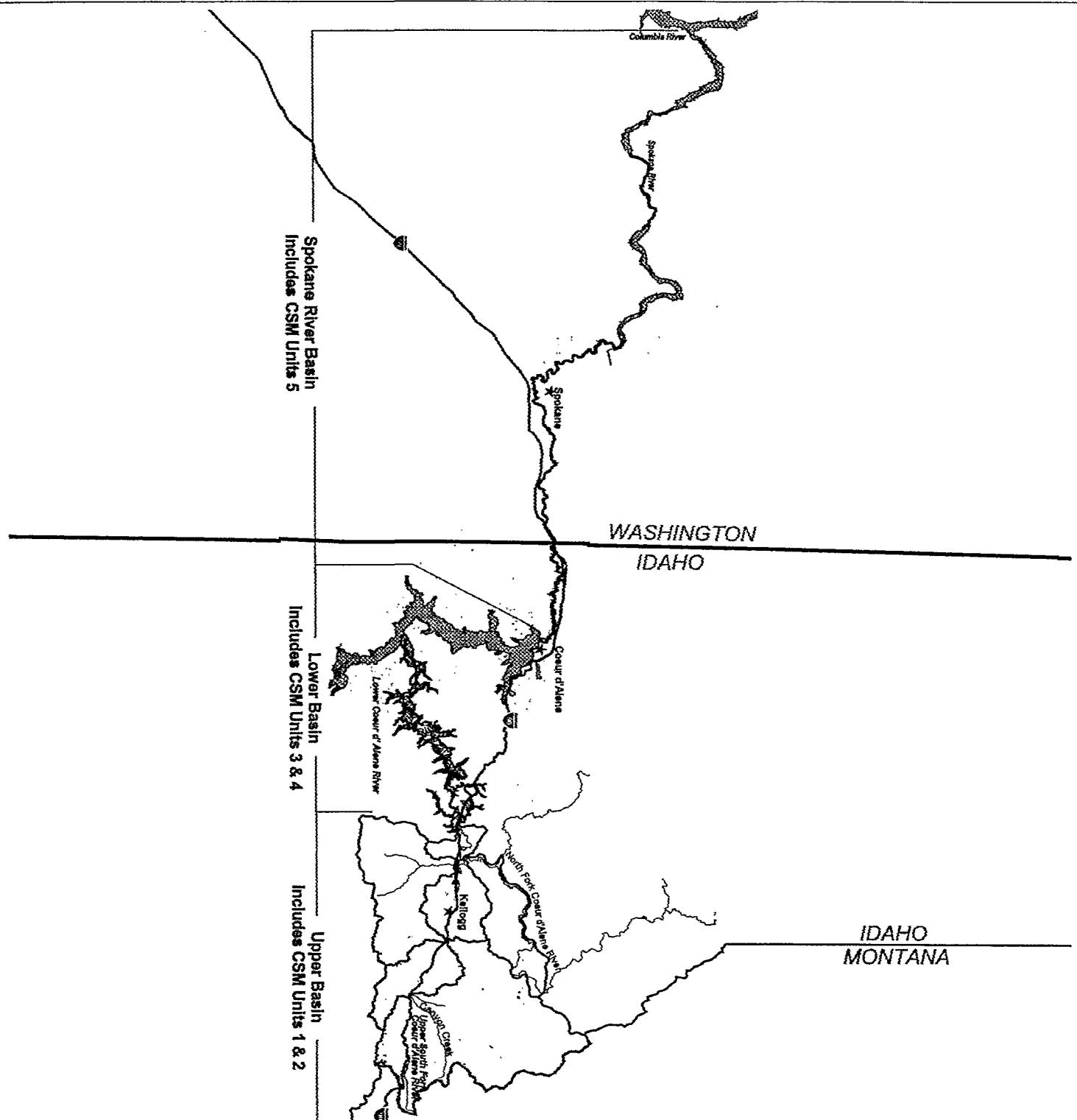
The average (or mean), the geometric mean, and the median are all measures of the central tendency of the data set. The geometric mean is the average of a lognormally transformed data set, and is a better measure of central tendency when the data being analyzed conform to a lognormal distribution. The UCL is the upper bound of uncertainty around the mean (or the geometric mean as specified). The median is the value in the middle of a data set numerically ranked from lowest to highest concentration. The median is a less useful statistic for describing the range of background concentrations in a given media type. However, median values have been reported in previous studies of background COPC concentrations in the Basin.

The r^2 value measures the degree of correspondence between the statistically fitted probability distribution and the data. Percentiles of the data distribution are a statistical estimation of the concentrations below which the specified percentage of the entire background population will lie. Percentiles are calculated from the probability distribution. For example, the 50th percentile value for a given background data set is the estimated concentration below which 50 percent of a background data population will lie. The 95th percentile is the concentration below which 95 percent of the background data population will lie. The 90th and 95th percentiles are typically used to represent the upper end of a range of background concentrations. The 5th and 25th percentiles are used to represent the lower ends of a range. The 95th percent upper tolerance limit is the upper bound of the uncertainty around the 95th percentile of the data distribution to 95 percent confidence.

1.5 ORGANIZATION

The remainder of this document is organized as follows. In Section 2, a brief overview is provided of the principal existing studies that include data and analyses pertinent to background metal concentrations. Section 2 also includes an identification of data gaps in the existing studies for sediment background concentrations in the Upper and Lower Basin, and the Spokane River Basin, and Basinwide surface water. In Section 3, a description is provided of the methodology used to develop background COPC concentration ranges for Upper and Lower Basin sediments, and Basinwide surface water using data collected for the RI/FS; and for sediments in the Spokane River Basin using soil background data provided by the Washington Department of Ecology (Ecology). The results of these analyses are presented in Section 4 and compared to background concentration values developed in previous studies. In Section 5, the selected background concentration ranges in the three media types for the three areas of the Basin are identified.

Figure 1.1
**Geographic Areas of the Coeur d'Alene
 and Spokane River Basins for
 Determination of Background Metal
 Concentrations**



Location Map



NOTES

- 1) Base map coverage obtained from the Coeur d'Alene Tribe, URS Greiner, Inc., CH2M HILL, and the Bureau of Land Management.
- 2) CSM - Conceptual Site Model

0 10 20 Miles



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Coeur d'Alene Basin RI/FS
BACKGROUND TECHNICAL
MEMORANDUM

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This map is based on 1990
State Plane Coordinate System
North American Datum 1983

2.0 PREVIOUS STUDIES

Several studies and data sources exist that include information on background metal concentrations in various media or include information relevant to evaluation of background. It should be noted that several of these studies use the term "baseline" to describe background concentrations. For the purpose of this technical memorandum, the term background is viewed by EPA to be synonymous with baseline and is applied herein. The studies reviewed as part of this evaluation are first listed by geographic area and, then, discussed in more detail.

- Upper Basin
 - Kennedy (1960): Developed background concentrations for selected metals of interest in soil and sediment in the Upper Basin. Kennedy also examined background metals concentrations in soils over outcropping veins to identify elevated levels attributable to mineralization.
 - Gott and Cathrall (1980): Collected 8,700 upland soil samples selected to be representative of metal concentrations in media that were not impacted by prior mining activities, or atmospheric deposition from smelter operations. These data were collected as part of an economic mineralization study.
 - LeJeune and Cacela (1999): In support of the Natural Resource Damage Assessment process, LeJeune and Cacela conducted a reanalysis of the Gott and Cathrall data to account for potential statistical bias due to non-random spatial distribution of sampling locations. They included additional data from the Lower Basin and reference areas in their analysis and developed baseline concentration estimates for cadmium, lead, and zinc in soils and sediments.
 - URS Greiner, Inc. (URSG) (USEPA 2000b): Under Field Sampling Plan No. 8 (FSP 8), URSG developed monitoring wells at various areas in the Upper Basin, including the mineralized Canyon Creek and Ninemile Creek watersheds. Sediment metals concentration data from these monitoring wells are examined in this analysis for the purpose of developing background COPC ranges for Upper Basin sediments. The methods used in this analysis are described in Section 3.2, and the results are presented in Section 4.1.

- Lower Basin
 - Horowitz et al. (1992, 1993): Horowitz et al. conducted sampling of surface and subsurface sediments in Coeur d'Alene Lake as part of an ongoing U.S. Geological Survey (USGS) study on the distribution of mining-related metal contamination from the Coeur d'Alene Basin. These studies included development of estimated background concentrations of selected metals in sediments.
 - URSG (USEPA 1998a and 1998b): In support of the RI/FS, sediment core samples were collected at various locations throughout the Lower Coeur d'Alene River Basin (these data are reported in USEPA 1998a). These data were analyzed to develop estimates of upper bound background concentrations for selected COPCs in Lower Basin sediments (USEPA 1998b).
 - LeJeune and Cacela (1999): The LeJeune and Cacela study included a reanalysis of core sample data collected by URSG (USEPA 1998a) and developed upper bound background concentrations for cadmium, lead, and zinc.
- Spokane River Basin
 - Washington State Department of Ecology (WDOE 1994): Collected 27 soil samples from various locations throughout the Spokane River Basin for the expressed purpose of determining an estimated range of background concentrations for a selected group of metals. This study included 8 of the 10 COPCs considered herein.
 - Grosbois et al. (2000): As part of the ongoing study being conducted by USGS on the distribution of mining-related metals contamination from the Coeur d'Alene Basin, Grosbois et al. collected five surface sediment samples for the expressed purpose of estimating background sediment concentrations in the Spokane River Basin. They also collected 6 core samples to depths pre-dating the onset of mining in the Coeur d'Alene Basin, as well as 100 grab samples.

- Basinwide Surface Water
 - Natural Resource Trustees (USFWS et al. 2000): Conducted an analysis of baseline surface water concentrations of selected metals in the Upper Basin using data collected for the RI/FS.

2.1 PREVIOUS ESTIMATES OF BACKGROUND IN THE UPPER BASIN

Sampling and analyses of background metal concentrations in soils and sediments in the Coeur d'Alene Basin began more than one-half century after the onset of mining with a study by Kennedy (1960). Kennedy estimated the soil background concentrations of lead, zinc, and copper from non-mineralized areas. The estimated concentrations for lead, zinc, and copper from non-mineralized upland soils were 21, 100, and 24 mg/kg, respectively. The background concentrations estimated for stream sediments were 40, 76, and 45 mg/kg for lead, zinc, and copper, respectively. Kennedy also examined metals concentrations near outcropping veins to identify elevations in background concentrations attributable to mineralization. However, the analytical methods used by Kennedy were partly qualitative and the results are not useful quantitatively.

USGS conducted a study in the Coeur d'Alene Mining District to evaluate the use of geochemical anomalies in predicting the presence of concealed ore deposits (Gott and Cathrall 1980). They collected and analyzed approximately 8,700 soil and 4,000 rock samples from throughout the district for a selected suite of metals. The sampling locations and methods were chosen to minimize the influence of mining- and smelter-related contamination.

These data were then evaluated to identify which elements might be useful as indicators of known and potential undiscovered ore deposits. The Gott and Cathrall study covered approximately 300 square miles of the Coeur d'Alene Mining District. The area included in the study is the probable source area of most metals-enriched sediments deposited in and around the South Fork Coeur d'Alene River, the Lower Coeur d'Alene River, Coeur d'Alene Lake, and the Spokane River. The percentile ranges of the 10 COPCs in upland soils from Gott and Cathrall (1980) are shown in Table 2-1.

The sampling methodology used by Gott and Cathrall was opportunistic. To reduce the statistical effects of this non-random sampling, LeJeune and Cacela (1999) aggregated the sampling locations into 0.5-km² hexagonal cells, and then calculated a mean value for each cell. This resulted in 1,005 cell means. LeJeune and Cacela examined the soil and rock data collected by Gott and Cathrall at these locations, and added data from other sources, including the basinwide RI and studies by the USGS. These data were used to calculate statistics on the

concentrations of cadmium, lead, and zinc in reference areas (which included mineralized zones), in soils and rocks over mineral stocks, and in soil and rocks over mineral belts. Summary statistics for soils in mineralized and non-mineralized areas of the Upper Basin, and for Basinwide pooled soils and sediments from LeJeune and Cacela (1999) are shown in Table 2-2.

Runnels (1999) proposed that the calculations of LeJeune and Cacela (1999) would underestimate background values because they failed to consider the contribution from surface expression of ore veins and associated highly mineralized areas. Maest, LeJeune, and Cacela (2000), taking into account the suggestion of Runnels, recalculated the statistics of LeJeune and Cacela (1999) for lead, and found that the geometric mean concentration would increase less than 2 percent by taking these highly mineralized areas into account. This was mainly because the surface expression of the ore veins and surrounding mineralized rocks account for a small proportion of the surface area of the watersheds in which they are found. In Canyon Creek, the most mineralized watershed, these features account for 0.4 percent of the total surface area. Over the South Fork Coeur d'Alene River as a whole, these features account for approximately 0.2 percent of the total surface area. The small magnitude of the increase in geometric mean concentrations can also be attributed to the fact that mineralized areas were already included to some extent in the LeJeune and Cacela (1999) calculations.

2.2 PREVIOUS ESTIMATES OF BACKGROUND IN THE LOWER BASIN

Horowitz et al. (1992, 1993) collected surface samples and 12 gravity cores (97.5 to 140.5 cm thick) from the long axis of Coeur d'Alene Lake to evaluate the spatial and geochemical distribution of metals in lake sediments. An important aspect of this study was the estimation of background metal concentrations in Coeur d'Alene Lake. Some statistical parameters from these analyses are provided in Table 2-3.

Sediment core samples relevant to estimation of background ranges in the Lower Basin have been collected as part of the RI/FS process. A sediment sampling effort was conducted by URSG (USEPA 1998a) with the objective of collecting data to help define the vertical extent of mining waste deposits within the Coeur d'Alene River main stem, lateral lakes, and the floodplains of the Lower Basin. The second phase of the field investigation consisted of a sediment coring survey, which was conducted at four transects of the river main stem and within the lateral lakes. The coring results were intended to support the results of the geophysical survey and to be used for estimating the vertical distribution of metals in the sediments down to pre-mining sedimentary material.

Using the data from these sediment core samples, URSG (USEPA 1998b) estimated the upper end of a range of background sediment concentrations for antimony, arsenic, cadmium, copper, lead, mercury, and zinc based on statistical analysis of metal concentrations. The upper bound background estimates, expressed as the 95th percentile of the data distribution for each metal, are presented in Table 2-4. The statistical methodology used was based on the California Environmental Protection Agency (Cal/EPA) policy for selecting inorganic COPCs (i.e. metals) at hazardous waste sites (Cal/EPA 1997). This analysis was conducted to support the Human Health Risk Assessment component of the RI/FS. The analytical methodology used in this study was acknowledged to result in an overestimate of the upper end of the background range for each COPC. Thus, these preliminary values were acknowledged to be biased high.

LeJeune and Cacela (1999) analyzed a subset of the core samples collected in the Lower Basin (USEPA 1998a) to calculate background sediment concentrations in the Lower Basin. LeJeune and Cacela used the following three criteria to select core sample data for analysis:

- A core must be part of a whole core that contained three or more samples.
- Based on observations of sediment concentrations with depth, samples selected as representative of pre-mining background concentrations must have concentrations less than 10 percent of the maximum concentration measured in each core.
- The samples selected as representative of pre-mining background concentrations must have come from the deeper portions of the core sample than the mining contaminated sediments.

Reported values from LeJeune and Cacela (1999) for Lower Basin sediments are presented in Table 2-4 and compared with URSG 95th percentile estimates (USEPA 1998b).

2.3 SPOKANE RIVER BASIN

Ecology collected soil samples in the Spokane Basin for the express purpose of determining natural background concentrations for metals (WDOE 1994). Soil samples from twenty-seven locations were collected and analyzed for 12 metals, including eight of the COPCs: arsenic, cadmium, copper, iron, manganese, mercury, lead, and zinc. These samples were collected at depth ranges from zero to 3 feet and represent both natural and anthropogenic (e.g., atmospheric deposition) sources of metals. These data were provided by Ecology for analysis by URSG. Summary statistics were developed for these data including the statistically fitted probability distribution of the data, the coefficient of determination (r^2), minimum, maximum, median and mean concentrations, and the 5th, 90th and 95th percentile ranges, using the Model Toxics

Control Act (MTCA) background module provided by Ecology (WDOE 1997). Results from these calculations are summarized in Table 2-5. (Additional statistics are presented in Section 4.)

As part of the ongoing research conducted by Art Horowitz of the USGS on the distribution of mining-related contaminants in the Coeur d'Alene Basin, Grosbois et al. (2000) collected surface and subsurface grab samples, and core samples on the Spokane River in 1998 and 1999. The sampling area included the entire length of the Spokane River basin from the outlet of Coeur d'Alene Lake to Lake Roosevelt on the Columbia River, divided into five geographic units based on hydrologic similarities and dam locations. The sampling effort included 100 surface and subsurface grab samples, as well as 6 core samples, 3 of which penetrated to depths that pre-dated the placement of dams on the river, and mining-related activities in the Coeur d'Alene Basin.

Grosbois et al. (2000) also collected and analyzed five surface sediment samples specifically to evaluate background metal concentrations. The minimum, maximum and average background concentrations for the 10 COPCs from the five surface samples for background are provided in Table 2-6. In addition to the differences between their background data set and typical sediment metals concentrations, Grosbois et al. (2000) noted that metals concentrations in three of their sediment cores dropped significantly at depth thresholds corresponding to the dam placement and the beginning of mining-activities.

It may not be appropriate to use the data of Grosbois et al. (2000) to determine background concentrations for sediments. The reference locations chosen for collecting background sediments, Liberty Lake (3 samples), Hangman Creek (1 sample), and the Little Spokane River (1 sample) are in the same geologic unit as the Spokane River and were not known to be impacted from mining and processing operations in the Coeur d'Alene Basin. However, all three locations are upgradient of the historic Spokane River channel and would not have been exposed to native Coeur d'Alene sediments. Therefore they would not reflect the effects of the natural mineralization of the Coeur d'Alene Basin on Spokane River sediments.

The core samples collected by Grosbois et al. (2000) that penetrated to depths pre-dating the installation of dams on the Spokane River may not be representative of pre-mining mineralization as well. Historically, the Spokane River was not considered a depositional river system. Sedimentation began after much of the Spokane River was transformed into a depositional environment by the installation of dams in the 20th century. Because mining in the Coeur d'Alene Basin pre-dated the installation of dams on the Spokane River, all of the sediments deposited in impoundments are affected by mining related contamination. Further, unless it can be demonstrated that the core samples collected by Grosbois et al. were taken in locations that were historically depositional, the cores that penetrated to depths pre-dating dams

may have captured soils (i.e. not sediments) that were inundated by flooding. Therefore these data appear suspect for use in estimating sediment background concentrations.

2.4 SURFACE WATER

The Natural Resource Trustees (USFWS et al. 2000) used an existing set of data on surface water COPC concentrations collected by EPA, USGS, and the Idaho Department of Environmental Quality (IDEQ) to estimate surface water background concentrations for three different sub-areas of the Upper Basin. These areas are: the Upper South Fork, the Page-Galena Mineral Belt area (corresponding to the mainstem South Fork Coeur d'Alene River), and the Pine Creek drainage. They then pooled these results into estimates for the entire Upper Basin as a whole. They identified characteristic sampling locations for each of the areas and the Upper Basin as a whole, and selected background-sampling locations appropriate for each area. These locations were selected based on similarities to the contaminated areas in geology, hydrology, and the extent of mineralization present. The background sampling locations included unimpacted upstream reaches in watersheds heavily affected by mining, and watersheds with relatively minor mining impacts. The Natural Resource Trustees calculated the median and 25th and 75th percentiles for the three metals in each of the three areas and the Upper Basin as a whole. These data are presented in Table 2-7.

2.5 DATA GAPS

Existing studies of the Basin did not identify background concentration *ranges* for sediments in the Upper and Lower Basin, or in the Spokane River Basin. Previous studies of sediment background concentrations in these areas did not identify the lower ends of the data distribution (e.g., the 5th percentile), leaving the lower end of the background range unidentified. Further, previous studies did not examine all 10 COPCs.

Background concentration ranges for the 10 COPCs in sediments in the Upper Basin, the Lower Basin, and the Spokane River Basin are developed in this technical memorandum. In addition, it was desirable to develop the 95th percentile of surface water background concentrations (as the upper bound of the range) using the surface water background analysis developed for the Basin by the Natural Resource Trustees (USFWS et al. 2000). The data sources and methods used to develop these estimates are presented in the following section.

Table 2-1
Percentile Ranges of Background Concentrations for COPCs in Upper Basin Soils
(Gott and Cathrall 1980)

Metal	25th Percentile (mg/kg)	50th Percentile (mg/kg)	75th Percentile (mg/kg)	90th Percentile (mg/kg)
Antimony	0.8	1.1	2.9	5.8
Arsenic	-	-	10	22
Cadmium	0.5	0.8	1.3	2.7
Copper	21	28	37	53
Iron	27,000	36,000	49,000	65,000
Lead	28	43	75	171
Manganese	777	1,333	2,242	3,597
Mercury	0.05	0.1	0.2	0.3
Silver	0.4	0.6	0.7	1.1
Zinc	61	95	161	280

Notes:

COPCs - chemicals of potential concern

mg/kg - milligram per kilogram

NA - not available

Xth percentiles (e.g., 90th percentile) - X percent of the background data distribution will fall below this estimated value.

Statistics based on 8,700 samples.

Table 2-2
Background Concentrations of Cadmium, Lead, and Zinc in Various Media Types
in the Upper Coeur d'Alene River Basin (LeJeune and Cacela 1999)

Metal	Media Type	Geometric Mean	95% UCL on Geometric Mean	95th Percentile
Cadmium	Upland Soils ^a	0.83	0.89	3.83
	Soils Over Stocks ^b	1.15	1.44	4.33
	Soils Over Belts ^c	0.79	0.89	3.13
	Pooled Reference ^d	0.61	0.64	2.86
Lead	Upland Soils ^a	45.5	48.8	190
	Soils Over Stocks ^b	50.0	64.5	208
	Soils Over Belts ^c	49.3	55.4	195
	Pooled Reference ^d	30.7	32.4	175
Zinc	Upland Soils ^a	101	105	296
	Soils Over Stocks ^b	128	164	628
	Soils Over Belts ^c	121	132	412
	Pooled Reference ^d	63.3	66.4	263

^aUpland Soils – All upland soils pooled

^bSoils Over Stocks – Upland soils from mineralized areas over exposed mineral stocks

^cSoils Over Belts – Upland soils from mineral belt areas

^dPooled Reference – Pooled background concentrations from all upland soils and rocks in mineralized and unmineralized areas, Lower Basin sediments, sediments from reference watersheds, and reference sediments from mining affected areas in upper Canyon Creek and Ninemile Creek.

Notes:

mg/kg - milligram per kilogram

UCL - upper confidence limit on the geometric mean

95th percentile - the value representing the upper 95th percent of the data distribution (95 percent of the estimated background concentrations will be below this value).

Statistics based on 1,005 sample means spatially aggregated from the 8,700 soil samples of Gott and Cathrall (1980).

Table 2-3
Minimum, Maximum, Mean, and Median Concentrations for Surface and Core Samples
and Median Background Concentrations in Coeur d'Alene Lake (Horowitz 1992, 1993)

Metal	Minimum (mg/kg)	Maximum (mg/kg)	Mean (mg/kg)	Median (mg/kg)	Uncontaminated Median (mg/kg)
Antimony-S	0.5	96	23	19	0.7
Antimony-C	<0.1	215	34	18	1.2
Arsenic-S	2.4	660	151	120	4.7
Arsenic-C	3.5	845	103	30	12
Cadmium-S	<0.5	157	62	56	2.8
Cadmium-C	<0.1	137	25	26	0.3
Copper-S	9	215	72	70	25
Copper-C	20	650	91	60	30
Iron-S	19,000	164,00	51,000	49,000	30,000
Iron-C	26,000	137,000	67,000	57,000	47,000
Lead-S	14	7,700	1,900	1,800	24
Lead-C	12	27,500	3,200	1,250	33
Manganese-S	100	24,600	6,700	6,500	500
Manganese-C	100	69,000	4,500	2,600	900
Mercury -S	0.02	4.9	1.8	1.6	0.05
Mercury-C	<0.01	9.9	1.9	0.95	0.06
Silver-S	<0.5	21	6	4	<1
Silver-C	<0.01	82.5	15	15	0.5
Zinc-S	63	9,100	3,600	3,500	110
Zinc-C	59	14,000	2,400	2,100	118

Notes:

C - core samples (include contaminated samples); uncontaminated median C - based on 189 core samples

mg/kg - milligram per kilogram

S - surface samples (include contaminated samples); uncontaminated median S - based on 17 samples from the southern part of Coeur d'Alene Lake and St. Joe River

Median - the middle value in a data set ranked numerically from lowest to highest concentration

Table 2-4
Comparison of LeJeune and Cacela (1999) and URSG (USEPA 1998b) 95th Percentile
Concentrations for Selected COPCs in Lower Basin Sediments

Metal	LeJeune and Cacela (1999) Lower Basin Alluvium*			URSG (USEPA 1998b) Lower Basin Sediments
	Geometric Mean	95 Percent UCL on Geometric Mean	95th Percentile (mg/kg)	Lower Basin Sediment 95th Percentile (mg/kg)
Antimony	--	--	--	5
Arsenic	--	--	--	35
Cadmium	0.29	0.63	0.88	8
Copper	--	--	--	45
Lead	87.8	181	343	150
Mercury	--	--	--	1 ^b
Zinc	122	176	236	220

*LeJeune and Cacela refer to the material taken from the core samples as "alluvium"; this term is considered by EPA to be synonymous with sediment

^bMercury estimate based on 95th percentile of 152 potential background concentrations selected from 283 total available sediment samples from the Lower Basin

Notes:

mg/kg - milligram per kilogram

-- - not calculated

Data source for both studies USEPA (1998a). N=283 samples for all COPCs.

Table 2-5
Summary Statistics for Ecology Spokane Basin Background Metal Concentrations

Metal	Distribution	r ²	Minimum (mg/kg)	Maximum (mg/kg)	Mean* (mg/kg)	5th Percentile (mg/kg)	90th Percentile (mg/kg)	95th Percentile (mg/kg)
Arsenic	L	0.96	1.14	10.33	5.13	1.66	9.34	11.58
Cadmium	L	0.93	0.12	0.68	0.41	0.15	0.72	0.88
Copper	N	0.91	4.04	29.03	14.42	2.48	21.61	28.07
Iron	L	0.96	9,670	27,000	18,783	12,212	25,026	27,358
Lead	L	0.98	6.75	16.00	11.3	7.46	14.91	16.24
Manganese	L	0.97	354.5	796.5	506.73	339.5	663.5	721.0
Mercury	NP	0.85	0.004	0.131	0.02	0.00	0.02	0.04
Zinc	L	0.95	29.7	71	51.82	36.11	66.35	71.56

*Means are geometric means for all COPCs except copper which has a normal distribution

Notes:

L - lognormal distribution

mg/kg - milligram per kilogram

N - normal distribution

NP - non-parametric distribution

Statistics based on 27 samples for each COPC.

All values presented as reported using WDOE 1997.

Table 2-6
Minimum, Maximum, and Average Values for Background Sediment Concentrations
from Liberty Lake, Hangman Creek, and Little Spokane River
(Grosbois et al. 2000)

Metal	Spokane River Minimum Background (mg/kg)	Spokane River Maximum Background (mg/kg)	Spokane River Mean Background ^a (mg/kg)
Arsenic	2.0	8.3	5.2
Antimony	0.6	1.3	0.9
Cadmium	0.4	0.6	0.5
Copper	8	33	19
Iron	17,000	29,000	24,000
Lead	16	54	34
Manganese	220	700	390
Mercury	0.01	0.07	0.04
Silver	<0.5	<0.5	<0.5
Zinc	64	120	89

^aGrosbois et al. (2000) did not distinguish between the normal mean and the geometric mean in the presentation of their results.

Notes:

mg/kg - milligram per kilogram

Statistics based on five surface samples.

Table 2-7
Median and Percentile Ranges for Background Dissolved Surface Water Concentrations
of Cadmium, Lead, and Zinc in the South Fork Coeur d'Alene River Basin
(USFWS et al. 2000)

Sub-Area of Upper Basin	Statistical Parameter	Metal (µg/L)		
		Cadmium	Lead	Zinc
Upper South Fork Coeur d'Alene River	Median	0.06	0.15	5.35
	25th percentile	0.04	0.08	4.50
	75th percentile	0.07	0.25	8.45
Page-Galena Mineral Belt	Median	0.10	0.44	9.04
	25th percentile	0.07	0.21	6.76
	75th percentile	0.16	0.87	20.0
Pine Creek Drainage	Median	0.03	0.11	3.68
	25th percentile	0.02	0.07	2.94
	75th percentile	0.04	0.22	5.24
Entire South Fork Coeur d'Alene River	Median	0.06	0.18	6.75
	25th percentile	0.04	0.08	4.60
	75th percentile	0.10	0.52	10.7

Note:

µg/L - microgram per liter

3.0 METHODOLOGY FOR ESTIMATING BACKGROUND CONCENTRATION RANGES

In this section, the methods used to estimate sediment background concentrations in the Upper Basin, the Lower Basin, and the Spokane River Basin are described. These estimates are based on data collected in the Upper and Lower Basin for the RI/FS (USEPA 2000b), and in the Spokane River Basin by Ecology (WDOE 1994). In Sections 3.1, 3.2, and 3.3, respectively, the data sources and methods that were used to estimate background concentration ranges in sediments in these areas are described. The results of these analyses are presented in Section 4. Data sets used in this evaluation are included as Appendices C and D.

In addition to the analyses of sediment background concentrations, the surface water background analysis conducted by the Natural Resource Trustees (USFWS et al. 2000) was refined to develop the upper bound (95th percentile) of the background concentration range. The data sources and methods used in the refinement of this analysis are described in Section 3.4, and the results are presented in Section 4.

3.1 UPPER BASIN SEDIMENTS

EPA has collected a data set suitable for identifying background concentration ranges in Upper Basin sediments as part of the RI/FS process. In conjunction with FSP 8, monitoring wells were installed in Canyon Creek and Ninemile Creek. Additionally, one monitoring well was placed in Pine Creek. During installation of these monitoring wells, sediment samples were collected and analyzed for the COPCs. The wells were installed in depositional areas where sediments predominate. Samples from these areas were used to estimate background concentrations for sediments. These data are presented in the RI report (USEPA 2000b), and are also presented in Appendix A for ease of reference. The methods used to analyze these data for background concentration ranges are described below. The results of this analysis are presented in Section 4.

3.1.1 Concentrations vs. Depth Plots

To evaluate the distribution of COPCs in Upper Basin sediments, the FSP 8 data were plotted on a chart of concentration versus depth. The plots helped distinguish background concentrations from mining-impacted concentrations based on the premise that sediments below a certain depth would be representative of pre-mining conditions. Plots of concentration versus depth for each analyte are shown in Figures B-1 through B-10 (Appendix B). Criteria developed to help

eliminate bias in evaluating these plots are listed below. These criteria were modified from LeJeune and Cacela (1999).

- All samples from the background population must have concentrations that are less than 10 percent of the highest concentrations encountered in the pooled population.
- Selected data points for inclusion in the background population (all concentrations less than 10 percent of the data set maximum) must come from deeper section of the borings than the highest concentrations encountered in the pooled population.

Typically, a depth was identified where metal concentrations declined abruptly. Metal concentrations above this discontinuity were considered representative of mining-impacted sediments while those below this change were taken to represent background concentrations. This conclusion was supported by statistical analyses of the data, as described in the following section.

Data from one boring in Canyon Creek (CC437) were excluded for all analytes except cadmium and manganese because of anomalously high detection limits and reported estimated values at all depths. Data from four borings at the Rex Mine Site were excluded because three were out of the floodplain (NM421, NM422, NM423) and one was located in a tailings pile (NM444).

3.1.2 Cumulative Frequency Distribution Plots and Statistical Analyses

The selection of background data using the concentration vs. depth plots was supported by statistical analyses of the data using cumulative frequency distributions (CFDs). CFDs are also known as cumulative probability plots or cumulative probability density functions. The CFDs were used to confirm the depth ranges selected as representative of background, and to estimate the range of background concentrations for each COPC. The use of CFDs to identify a background data population from a mixture of contaminated and background data was based on the Cal/EPA final policy on selecting inorganic constituents as chemicals of potential concern for risk assessment at hazardous waste sites (Cal/EPA 1997).

Because trace chemicals generally follow a lognormal probability distribution, the sample concentration data for each chemical were analyzed as lognormal CFDs, where the log concentration is plotted against the normal standard variate (equivalent to the standard deviation for the normalized variable). On a lognormal CFD, the log-transformed concentrations follow a normal distribution, with the log concentrations versus normal standard variate plotting as a straight line.

The monitoring well borehole COPC data were analyzed using the MTCA background module statistical package to confirm that each COPC was best represented by a lognormal data distribution (WDOE 1997).¹ The lognormal CFD for each COPC was estimated by the following procedure (adapted from WDOE 1992 and Cal/EPA 1997). First, all non-detected values were given a sample concentration equal to one half of the laboratory detection limit for that sample. Next, all sample concentrations were log transformed by taking the natural logarithm of each concentration. Then, for each chemical, the sample log-transformed concentrations were ranked from lowest to highest. The normal standard variate (u) of the ranked log-transformed concentrations were then calculated using the following formula:

$$u = \text{inverse} (I - 3/8)/(N + 0.25)$$

Where:

u = normal standard variate
I = rank
N = number of samples

The calculated values of u were then plotted against the log-transformed concentrations for each COPC (non-detects were censored, meaning the concentrations were not plotted but were considered in the ranking of the data). The plotted positions of u are unbiased estimates of the cumulative probabilities associated with corresponding log-transformed sample concentrations (Cunnane 1978). On a lognormal CFD plot, a pooled data set containing both background and contaminant concentrations will ideally show two distinct populations identifiable by their distinct slopes, separated by a transition zone of rapidly escalating concentrations. The population with lower concentrations represents background, while the population to the upper right of the distribution is taken to represent contaminated sediments.

Lognormal CFDs were calculated for each COPC. Regression lines were fit to each lognormal CFD plot and a coefficient of determination (r^2) was calculated to determine the goodness of fit of the regression line to the data. A high r^2 value supports the assumption that concentrations are lognormally distributed. The r^2 values were also used to identify distinct background populations. This was done by developing CFDs for concentrations over different depth intervals (e.g., <10 feet, 0 to 15 feet, >10 feet, >15 feet, etc.). A declining r^2 value is an indication that either two different populations are being considered together, or the background population is not fully represented. A high r^2 value below a given depth is a strong indication of a single background population.

¹All COPCs have a lognormal distribution, except mercury which has a non-parametric distribution. When the mercury non-detects are censored, the data distribution is lognormal.
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Once a distinct background population was identified, an unpaired student t-test was used to determine if metal concentrations between that population and the concentrations above that depth range were significantly different from one another. The significance level was set at $\alpha = 0.05$ (less than a 5 percent chance of committing a Type I error; that is, concluding they are different when in fact they are the same). Therefore, if metal concentrations for the selected background population are significantly different (lower) than concentration data from the population assumed to represent contaminated sediment concentrations (a T-test P value <0.05), it was concluded that the two selected populations are different from one another. The T-tests were calculated on the log-transformed concentration data. Once a background population was identified, background ranges and statistical parameters (percentiles, medians, means, coefficients of variation, standard deviations, etc.) were calculated.

To support the selection of depth ranges representative of background conditions using the concentration vs. depth plots, two sets of CFDs were plotted for each COPC. First, a single lognormal CFD was plotted showing the entire data set with the selected depth range highlighted. Second, a series of lognormal CFDs were plotted for each COPC using different depth ranges. The COPC concentrations from the selected depth range should fall within the lower concentration segment of the distribution.

3.2 LOWER BASIN SEDIMENTS

As discussed in Section 2.2, sediment core samples useful for estimation of background COPC concentration ranges in Lower Basin sediments have been collected as part of the RI/FS process. These data were used previously to estimate the upper end of a range of background sediment concentrations for antimony, arsenic, cadmium, copper, lead, mercury, and zinc (USEPA 1998b). No analysis was conducted for the remaining COPCs iron, manganese, or silver. Further, the methodology used in this prior analysis systematically overestimated the upper bound of background COPC concentration ranges, and did not identify the low end of the background range for the COPCs analyzed.

To account for these limitations, Lower Basin sediment background COPC ranges have been estimated from core sample data collected for the RI/FS (USEPA 2000b) using a refinement of the methodology used by URSG (USEPA 1998b). This method is somewhat different from the one used on the Upper Basin data. The affected media in the Lower Basin are considered to be all sediments due to the depositional nature of the environment. The background data set was derived from core sample data from the URSG database collected by URSG in support of the RI/FS. The number of samples for each COPC ranges from 89 to 146.

The Lower Basin core samples penetrated to varying depths. Because of the highly variable depositional depths present in the Lower Basin, concentration versus depth plots were not useful

for identifying a threshold depth for background concentrations of COPCs. The range of background concentrations was estimated using a ten step process described below, and supported by Figures A-11 and A-12 (Appendix A):

Step 1: For each COPC, the distribution of the pooled data was identified as lognormal and a lognormal CFD of the pooled data set (283 samples for each COPC) was plotted with log concentration in mg/kg as the independent variable and the normal standard variate of the population as the dependent variable using the methods described in Section 3.1 (see Figure A-11).

On a lognormal CFD plot, a pooled data set containing both background and contaminant concentrations will ideally show two distinct populations identifiable by their distinct slopes, separated by a transition zone of rapidly escalating concentrations. The population with lower concentrations represents background, while the population to the upper right of the distribution is taken to represent contaminated sediments.

Step 2: A visually fit line was plotted through the lower bound population, diverging from the CFD plot at the beginning (tangent) of the transition zone between populations. Percentile values for background concentrations derived from this tangent line will systematically overestimate the upper bound of the background range because the slope of the line is decreased and intercept of the line is increased by the influence of the contaminated values on the shape of the lognormal CFD plot.

Step 3: The point at which the visually fit tangent line diverges from the CFD plot was identified as the limit of a lower bound background population. This population is considered a lower bound of background because it does not include the higher background concentrations in the transition zone of the CFD plot.

Step 4: The lower bound background population is plotted as a separate CFD.

Step 5: A regression line is calculated and plotted for the lower bound background population. Percentile values derived from this regression line will systematically underestimate the upper bound of background concentrations because this data distribution does not include upper bound background values in the transition zone of the lognormal CFD.

Step 6: A line bisecting the visually fit tangent line and the lower bound data population regression line is drawn.

Step 7: The 95th percentile value from the bisecting line is estimated from the normal standard variate value of 1.645 (this value corresponds to the 95th percentile of the distribution).

Step 8: The best estimate of the background data set is represented by the portion of the pooled data that has concentrations below the 95th percentile of the bisector from Step 7. This best estimate of the background data set is believed to capture the higher background concentration values in the transition zone between populations, with the caveat that some lower bound contaminant values will also be included. This data population is believed to provide the best-estimate of the range of background sediment concentrations in the Lower Basin.

Step 9: The best-estimate data set is plotted as a CFD.

Step 10: A regression line is calculated for the best-estimate data set, and percentile values and summary statistics are developed.

This approach is believed to provide a reliable means of estimating background concentrations for each COPC in the Lower Basin. This approach is supported by both empirical testing and statistical evaluation of the best-estimate background data set. In all cases, the identity of the best estimate background data set as a distinct population representative of background is supported by high r^2 values.

3.3 SPOKANE RIVER BASIN SEDIMENTS

Twenty-seven samples from the Spokane Basin were collected and analyzed to calculate background concentrations for eight COPCs: arsenic, cadmium, copper, iron, manganese, mercury, lead, and zinc. The 90th percentile distribution and various summary statistics on these data were computed by Ecology (WDOE 1994).

In this study, the raw data from Ecology (WDOE 1994) were evaluated using the MTCA background module statistical package (WDOE 1997). Using this statistical package, various percentiles of the soil background distributions were calculated. The data were also plotted as a CFD to calculate additional summary statistics as necessary.

3.4 SURFACE WATER

Background concentrations of metals in surface water in the Coeur d'Alene Basin were calculated using the approach described by the Natural Resource Trustees in Chapter 10 of the

Report of Injury Assessment and Determination (USFWS et al. 2000). Surface water sampling locations are shown in Figure 3-1. For the purpose of screening data from the Coeur d'Alene Basin the national ambient water quality criteria (NAWQC), which are applicable or relevant and appropriate requirements (ARARs), would be used unless there is an indication that natural background would exceed the national criteria. As discussed in Section 2.2, the Natural Resource Trustees accounted for differences in mineralization and watershed properties to determine "baseline" concentrations of dissolved cadmium, lead, and zinc in three areas of the Coeur d'Alene Basin: the Upper South Fork, the Page-Galena mineral belt area, and the Pine Creek drainage.

Data from the same sampling locations used by the Natural Resource Trustees (USFWS et al. 2000) were used in this evaluation, except data from samples collected by EPA at stations SF 108 and SF 185 were deleted. Data from SF 108 and SF 185 were deleted because very high detection limits for some metals were determining the upper parts of the distributions. The same parameters were calculated for all 10 COPCs, and in addition, the 95th percentile was calculated for each of the distributions. Surface water data are presented in the RI report (USEPA 2000b).

3.5 ERROR RATES IN BACKGROUND CONCENTRATION DETERMINATIONS

The use of the 90th percentile of the rank-ordered background dataset sample concentration as the upper threshold of the background concentration range implies that, by definition, 10 percent of any group of samples from a truly ambient background population will exceed the 90th percentile concentration. These highest 10 percent concentrations of the background dataset will be defined as exceeding background even though they are part of the naturally occurring background range of metal concentrations within the Basin. In statistical terminology, the 10 percent of background samples whose concentrations are higher than a background threshold defined as the 90th percentile of the background distribution represents a Type I error rate (i.e., the false positive error rate, the probability of concluding that an individual sample concentration exceeds background when, in fact, it does not exceed background).

Type I errors will be made during any sample-to-background-concentration comparison for any background concentration defined as a threshold value (i.e., background is X mg/kg, and any sample concentration greater than X mg/kg exceeds background). Therefore, the potential for Type I errors is not limited to the specific background determination methodology selected for use in the Coeur d'Alene Basin, but is inherent in any statistical methodology that defines a single concentration value as the background concentration. This is true for background defined as a percentile, upper confidence limit of a mean, upper tolerance limit, maximum detected value of a sample dataset, or any other single threshold value.

If it is assumed that a background and a site data distribution are identical in both their measure of central tendency (e.g., the mean or median concentration) and shape (e.g., normally or lognormally distributed), the Type I error rate can be estimated from the following equation if a background threshold is defined as a given percentile of a background data set:

$$P = 1 - (i)^{na}$$

Where: P = probability that one or more sample measurements will exceed the i^{th} percentile of the background distribution

i = selected i^{th} percentile of the background distribution used as the background concentration threshold (e.g. 0.95, 0.90, etc.)

n = number of samples analyzed

a = number of chemical substances analyzed

The above equation estimates the probability that one or more of n random measurements will exceed the selected percentile of the background distribution if the site and background distributions are identical. This is a somewhat more statistically rigorous way of stating a common null hypothesis, which is that there is no significant difference between site and background concentrations. As an example using the 90th percentile of the background distribution as the background threshold value, the above equation indicates that for sample datasets consisting of 20 samples analyzed for a single chemical, there is a 0.87 probability (an 87 percent chance) that one of the sample measurements will exceed the background threshold value. Note that the previous statement does not mean that 87 percent of all the sample measurements exceed the background threshold.

The Type I error estimates generated from the above equation are valid only for truly ambient sample populations. They are not Type I error rates for contaminated sites, such as a waste pile, being compared to a background distribution. This is because the measure of central tendency (mean or median concentration) of the sample distribution at a contaminated site is higher than that of the background distribution. Within the Coeur d'Alene Basin, most analytical results have not been obtained from random sampling programs of the ambient environment. Instead, most environmental samples have been collected from areas known or suspected to be metal contaminated, in other words, from biased (biased in a statistical sense) sampling programs.

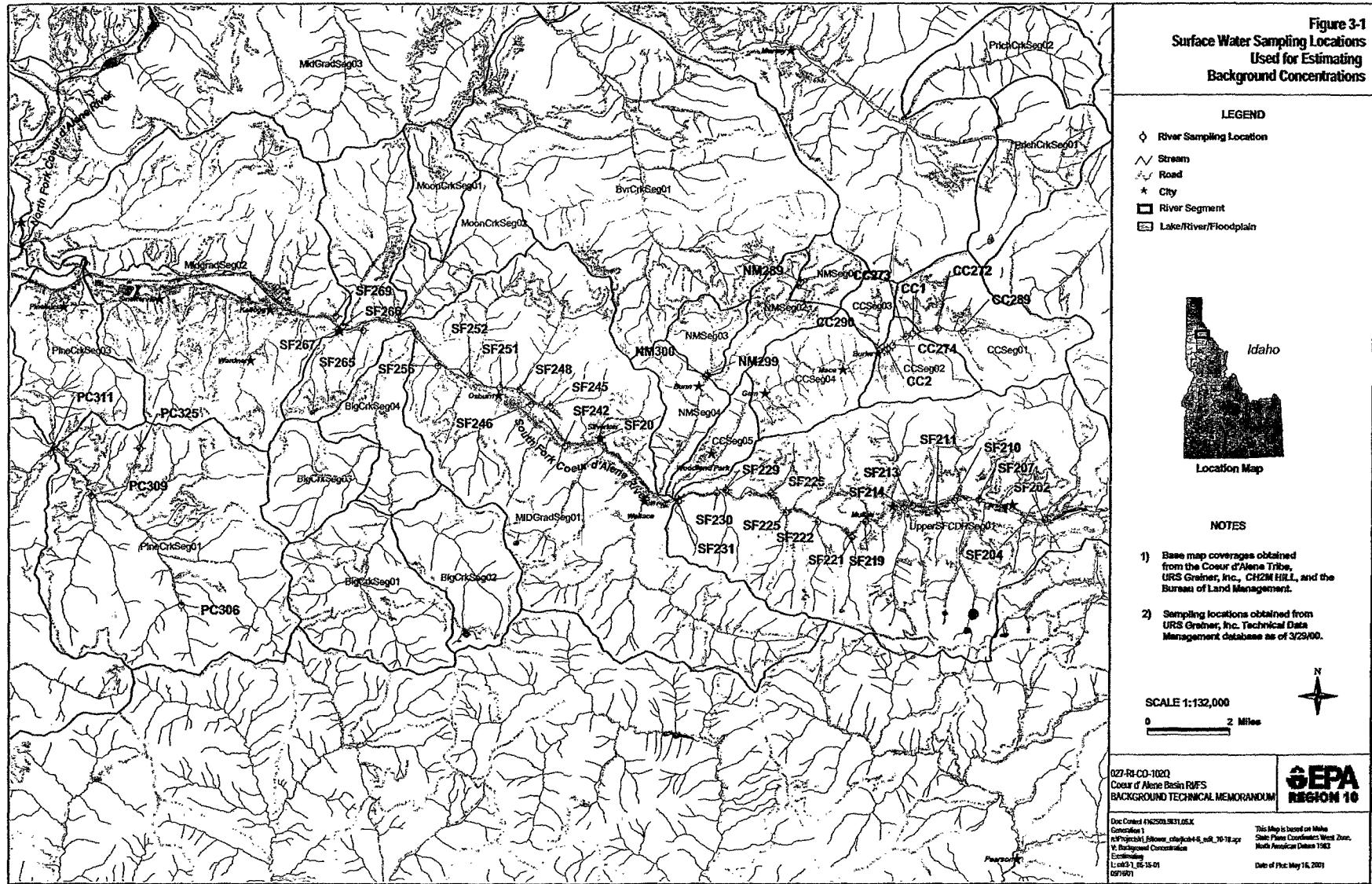
The above equation can overestimate the Type I error rate in situations where the site distribution is not identical to the background distribution. In particular, the Type I error rate for a site distribution whose measure of central tendency substantially exceeds the measure of central tendency of the background distribution will be lower than the error rate predicted using the

above equation. However, even under the circumstance of a site distribution whose central tendency concentration substantially exceeds the central tendency of the background distribution, the Type I error rate is unlikely to drop to zero if a large number of samples have been collected.

If both the background and contaminated site distributions (shape and measure of central tendency) are known, but are different in shape, central tendency, or both, more elaborate probabilistic methodologies than described herein can be employed to quantify the proportion of samples from a contaminated site whose concentration lies within a background distribution. Due to the heavily contaminated nature of portions of the Coeur d'Alene Basin, these more elaborate procedures would not provide useful information for remedial decisionmaking, and have not been described or performed.

The point to be made is that no statistically based methodology for comparing site chemical concentrations to background chemical concentrations can be completely free of potential Type I errors. This is because of the variation of individual sample concentrations within a data set. Although the uncertainty regarding the identification of samples which exceed background is small, the presence of even this small uncertainty should be acknowledged.

Figure 3-1
Surface Water Sampling Locations
Used for Estimating
Background Concentrations



4.0 RESULTS

The results of analyses of sediment background concentration ranges in the Upper Basin, Lower Basin, and Spokane River Basin described in Section 3 are presented in Sections 4.1, 4.2, and 4.3, respectively. The results of the reanalysis of surface water background concentrations are described in Section 4.4. The presentation of the results for the sediment analyses includes a comparison to background data for similar and related media types from the previous studies of the Basin described in Section 2.

4.1 UPPER BASIN

As discussed in Section 2.1, the upland areas of the Coeur d'Alene Basin were sampled extensively by the USGS (Gott and Cathrall 1980). The aspects of the USGS study that are of interest here are the reported ranges of background soil concentrations of each COPC from samples collected strictly in upland soils (as opposed to rocks). As discussed in Section 1.4, a separate set of background COPC concentration ranges is being selected for soils and sediments in the Upper Basin. These ranges were not believed to be representative of sediment background COPC concentrations. Therefore, background concentration ranges were estimated for 9 of the 10 COPCs using sediment data from monitoring well boreholes collected for the RI/FS (USEPA 2000b). The methods used to develop these estimates were described in Section 3.1. As discussed, plots of sediment COPC concentration vs. depth from the monitoring well boreholes were used to select a depth range representative of background sediment conditions (see Appendix A, Figures A-1 through A-10). The use of the depth ranges selected was supported by a combination of visual and statistical techniques based on two sets of lognormal CFDs for each COPC: a lognormal CFD of the entire data population showing the relationship of the data from the selected depth range to the data distribution; and separate lognormal CFDs over separate depth intervals with calculated r^2 values supporting the selection of the representative depth range. The lognormal CFDs for each COPC are presented in Appendix B, Figures B-1 through B-20. Summary statistics of this analysis are presented in Table 4-1, including: the selected depth range; minimum and maximum concentrations; the number of samples used in the calculation of the regression line and the number of non-detects; the r^2 value of the background population from the selected depth range; and the T-test p value demonstrating the statistical significance of the difference between the selected background and contaminant populations. In all cases except antimony and iron, the data sets from the depth ranges selected as representative of sediment background concentrations for each COPC were significantly different from the contaminant population at a significance level of $\alpha=0.01$. Antimony was significantly different at $\alpha=0.05$. Iron marginally exceeded the $\alpha=0.05$ significance level.

The 5th, 90th, and 95th percentiles of the RI/FS data for Upper Basin sediments are presented in Table 4-2, along with the geometric mean, the 95th percent UCL of the mean, and the upper tolerance limit on the 95th percentile of the distribution. The 95th percent UCL and the upper tolerance limit are the upper bounds of uncertainty (with 95 percent confidence) around the geometric mean and the 95th percentile of the distribution, respectively. The 5th and 90th percentiles are defined to represent the lower and upper bounds of the range of sediment background concentrations for each COPC.

The percentile values shown in Table 4-2 are compared to the equivalent percentile ranges for Upper Basin soils presented by Gott and Cathrall (1980) and LeJeune and Cacela (1999). This comparison tends to affirm the contention of LeJeune and Cacela (1999) that the Gott and Cathrall (1980) data are probably biased high for most metals in Basin sediments. Comparison of the 90th and 95th percentiles of the background ranges to the equivalent values estimated in the previous studies demonstrates that the upper bound of sediment background concentrations was lower for all nine COPCs calculated. A percentile range could not be calculated for silver in Upper Basin sediments because there were too few samples in the selected depth range with concentrations above detection limits. Given the pattern established by the other COPCs and the preponderance of non-detects in the silver background data, it is reasonable to conclude that the upper bound of the range of background concentrations in sediment for this COPC is lower than that found in Upper Basin soil.

A caveat must be applied to the Upper Basin sediment background COPC concentration ranges. The definition of background in this document is "...those levels attributable to natural and anthropogenic sources that are not influenced by mining contamination." Because the background data sets used to estimate the ranges described above were taken from greater than 10 feet depth, it is unlikely that these sediments have been exposed to non-mining related sources of metals due to human activity (e.g., tetraethyl lead emissions). Given that the results for sediments from this analysis are generally comparable to the soil background concentrations for the Upper Basin from previous studies, this factor is not expected to have a significant effect on the accuracy of the results.

4.2 LOWER BASIN

Previous studies of sediment background concentrations in the Lower Basin did not establish a range of background concentrations, and did not analyze all 10 COPCs. To account for this discrepancy, sediment background concentrations in Lower Basin sediments were estimated from core sample data collected for the RI/FS (USEPA 2000b), using the methodology described in Section 3.2. The estimates were based on statistical analyses of laboratory-reported concentrations of the 10 COPCs for Lower Basin sediment samples. Figures supporting the

analysis are presented in Appendix B (Figures B-21 through B-30). Summary statistics from the background data set are presented in Table 4-3, including: the minimum and maximum values in the data set; the number of samples in the estimated background data set used to calculate the regression line; the number of non-detects in the background data set that were censored when calculating the regression line; and the r^2 value of the regression line used to develop the percentile values of the data distribution. As noted in Table 4-3, the background data populations for 9 of the 10 COPCs present strong r^2 values (approaching or exceeding 0.9), which supports that these values represent a single population. A background concentration range could not be identified for mercury in Lower Basin sediments due to the large number of non-detects (greater than 50 percent of the pooled data population). The high number of non-detects and the shape of the CFD suggest the mercury background range is near or below detection limits. The 5th and 90th percentile values based on the calculated regression lines for the all COPCs except mercury are presented in Table 4-4, along with the geometric mean, the 95th percent UCL of the mean, and the upper tolerance limit on the 95th percentile of the distribution. The percentile values and related statistics are compared to the corresponding values from Lower Basin sediment background concentrations estimated by LeJeune and Cacela (1999), and USEPA (1998b).

Based on the sediment results obtained as part of this study, it appears that the upper bound background values developed by LeJeune and Cacela (1999) and USEPA (1998b) for Lower Basin sediments are biased high (Table 4-4). Horowitz et al. (1992, 1993) also calculated statistics on background data for Coeur d'Alene Lake (Table 2-3). While the statistics they calculated are not directly comparable to those presented here (median versus geometric mean), but are in general agreement with the ranges expressed in Table 4-4. The 5th and 95th percentiles of the background data set are defined to be the lower and upper bounds of the range of background concentrations for each COPC in Lower Basin sediments.

Comparing Tables 4-2 and 4-4, sediment background concentrations declined between the Upper Basin and the Lower Basin for seven of the eight COPCs that can be compared. This is logical considering the large contribution of sediments from the less mineralized watersheds of the North Fork Coeur d'Alene River to the Lower Basin sediment load. The contribution of less mineralized sediments from the North Fork would tend to lower the upper bound of the range of background COPC concentrations. Over the 1999 water year, the North Fork Coeur d'Alene River contributed 25,400 tons of sediment to the Coeur d'Alene River while the South Fork Coeur d'Alene River contributed 21,930 tons (USEPA 2000a). For the remaining two COPCs, silver and mercury, background ranges could not be developed in the Upper Basin (for silver), and in the Lower Basin (for mercury) due to the preponderance of non-detects in the background data sets. Given the pattern established by the other eight COPCs it is reasonable to conclude that the range of background concentrations for mercury in Lower Basin sediments will be lower than the range for Upper Basin sediments.

4.3 SPOKANE RIVER BASIN

Sediment background concentration ranges for the Spokane River Basin were estimated from soil background data collected by Ecology, using the methods described in Section 3.3. Ecology collected soil samples in the Spokane Basin for the express purpose of determining natural background concentrations of metals (WDOE 1994). Concentration data for arsenic, cadmium, iron, lead, manganese, and zinc followed lognormal probability distributions. Copper was the only one of the eight COPCs to be best represented by a normal distribution. The probability distribution for mercury concentrations appeared to be non-parametric. Percentile values for the data distribution, the mean, and the 95th percent UCL of the mean were calculated for each COPC using the MTCA background module (WDOE 1997). The 95th percent upper tolerance limit of the 95th percentile was also calculated. (For data sets conforming to a lognormal distribution, the means were geometric means, the standard mean was calculated for the remaining data sets.) These values are shown in Table 4-5. No Ecology data were available for antimony and silver (WDOE 1994).

Grosbois et al. (2000) collected sediment samples from reference areas for the purpose of determining background metals concentrations. However, their reference locations (Liberty Lake, Hangman Creek, the Little Spokane River) are up-gradient from the historic (pre-impoundment) Spokane River channel and would not have been exposed to native Coeur d'Alene sediments. The Grosbois et al. (2000) background values are not relied upon in this analysis due to concerns that they may not be representative of Spokane River sediment background concentrations. However, the mean background values calculated by Grosbois et al. for Spokane River sediments are presented in Table 4-5 for comparison. The Ecology mean concentrations were higher than corresponding values from Grosbois et al. (2000) for arsenic, and manganese, but were lower for the remaining COPCs.

Grosbois et al. (2000) also collected six core samples at various locations over the length of the Spokane River to examine metals concentrations at depths. These core samples show a marked decrease in COPC concentrations at depths that correspond with the placement of dams on the river. These core samples cannot be used to estimate background sediment concentrations however, as the deposition of sediments in the impoundments began after the onset of mining with the placement of the dams. Metals concentrations at depth in these cores decline to levels below evident contaminant values. As discussed in Section 2.3, these data are suspect for use in estimating sediment background concentrations.

Given these issues, background values calculated from the established background data for Spokane Basin soils (WDOE 1994) were accepted as the best estimate of sediment background concentrations in the Spokane River Basin.

4.4 BASINWIDE SURFACE WATER

Basinwide surface water background concentrations were estimated from surface water monitoring data collected in the Upper Basin for the RI/FS (USEPA 2000b), using the methods described in Section 3.4. The results of the surface water background analysis are presented in Table 4-6. This table includes background percentile ranges for all 10 COPCs and the NAWQC. For cadmium, copper, lead, silver, and zinc, NAWQC were calculated at a hardness of 30 mg/L as CaCO₃. This hardness is toward the lower end of the range for the mining-affected portions of the Coeur d'Alene Basin. More than 25 percent of the samples used to calculate background for the entire South Fork had hardness above 30 mg/L. The 25th and 95th percentiles for each COPC are defined as the lower and upper bounds of the range of surface water background concentrations.

All median values for background surface water were below the national chronic criteria. The 95th percentile of the background dissolved lead concentrations exceeded the national chronic criteria calculated at a hardness of 30 mg/L as calcium carbonate (CaCO₃) in the following areas: the Upper South Fork of the Coeur d'Alene River, the Page-Galena mineral belt area, and in the South Fork basin as a whole ("entire South Fork"), as described by the Natural Resource Trustees (USFWS et. al 2000).

Runnels (1999) suggested that the approach originally used by Maest et al. (1999) would likely underestimate "baseline" concentrations of cadmium, lead, and zinc, and presumably other COPCs as well, because they failed to consider the effects of the surface expression of ore veins and the surrounding metals-enriched rocks. Maest, LeJeune, and Cacela (2000) examined the potential effect of the surface expression of mineral veins and ore bodies using surface water metal concentrations from Mill Creek and Gentle Annie Gulch, where there are surface expression of mineralized veins and ore bodies but no significant tailings deposits. Concentrations of metals in surface water in these drainages were low compared to the ambient water quality criteria. Median background concentrations of cadmium and zinc in these drainages would have to be approximately double those measured before they would approach the national chronic criteria (Table 4-6).

Gott and Cathrall (1980) noted that the Dago Peak stocks might be the displaced tops of the Gem stocks. The Dago Peak stocks, which have not been mined, are northwest of Ninemile Creek and drain to Beaver Creek via Dudley Creek and Moore Gulch. The percentages of these drainages

that are covered by highly mineralized ore veins are higher than in Canyon and Ninemile Creek. Therefore, these drainages are expected to give a good indication of background metal concentrations in drainage from mineralized areas that have not been mined. URSG collected samples of water from Dudley Creek and Moore Gulch in August 1999 for the RI/FS (USEPA 2000b). Concentrations of dissolved metals in Dudley Creek and Moore Gulch shown in Table 4-7 were at or below the estimated background concentrations based on RI/FS data shown in Table 4-6, except for silver which had concentration values for these samples influenced by relatively high detection limits. This tends to confirm that the calculated surface water background ranges are representative of conditions in mineralized watersheds, and are biased high when applied to the Basin as a whole. These results and the analysis and refinements by Maest et al. (1999; Maest, LeJeune, and Cacela 2000) are presented in the Report of Injury Assessment and Injury Determinations (USFWS et al. 2000).

Table 4-1
Summary Statistics for Analysis of Sediment Data from the Upper Basin

Metal	URSG RI/FS Data (USEPA 2000b) for Upper Basin Monitoring Well Boreholes						
	Depth Range Selected (feet)	Minimum ^a (mg/kg)	Maximum (mg/kg)	N ^b	Non-Detects	R ² (mg/kg)	T-Test, p Value ^c
Antimony	>15	<0.420	12.4	12	10	1.000	<0.05
Arsenic	>15	<0.200	20.4	17	0	0.935	<0.01
Cadmium	>10	<0.031	2.30	30	21	0.834	<0.01
Copper	>15	3.90	31.0	17	0	0.835	<0.01
Iron	>15	6,160	39,400	17	0	0.940	>0.05 ^d
Lead	>15	7.50	73.9	17	0	0.954	<0.01
Manganese	>15	187	3,040	24	5	0.896	<0.01
Mercury	>10	<0.025	0.06	28	25	0.999	<0.01
Silver	>10	<0.080	2.40	28	27	-	<0.01
Zinc	>15	16.8	272	17	0	0.971	<0.01

^a "Less than" values are detection limits, indicating that the minimum value in the population was below detection limits.

^b N = number of sample values used to calculate the regression line of plot of the normal standard variate versus the ln of concentration that was used to make the estimates presented in Table 4-2.

^c T-test comparisons between population from the depth range shown versus the population from 0 feet depth to that depth (two-sample, one-sided, unequal variance performed on lognormally transformed data – all data populations were lognormally distributed). A value of $\alpha=0.05$ was selected; a p value <0.05 indicates a statistically significant difference.

^d Iron concentrations below 15 feet depth marginally exceeded the $\alpha=0.05$ significance level. These high values occurred in samples bordering bedrock, indicating that iron concentrations in sediments at depth may be influenced by accumulation from bedrock.

Note:

All concentration values are rounded to three significant figures.

Table 4-2
Comparison of Gott and Cathrall (1980) Upper Basin Soil and LeJeune and Cacela (1999)
Upland Soil Background Concentration Values to Background Concentration Ranges
for Upper Basin Sediments Estimated from RI/FS Data (USEPA 2000b)

Metal	URSG RI/FS Data (USEPA 2000b) for Upper Basin Sediments								Gott and Cathrall (1980)	LeJeune and Cacela (1999)	
	5th Percentile (mg/kg)	25th Percentile (mg/kg)	50th Percentile (mg/kg)	75th Percentile (mg/kg)	90th Percentile (mg/kg)	95th Percentile (mg/kg)	Geometric Mean (mg/kg)	95th Percent UCL ^a (mg/kg)	Upper Tolerance Limit ^b (mg/kg)	Upland Soils 90th Percentile (mg/kg)	Upland Soils 95th Percentile (mg/kg)
Antimony	0.597	1.05	1.56	2.31	3.30	4.08	2.82	-	7.58	5.8	-
Arsenic	1.34	2.89	4.92	8.40	13.6	18.1	4.92	6.72	34.7	22	-
Cadmium	0.043	0.142	0.324	0.742	1.56	2.44	0.431	-	4.89	2.7	3.83
Copper	6.71	11.3	16.2	23.3	32.3	39.2	16.2	19.8	61.1	53	-
Iron	6,850	10,700	14,500	19,700	26,000	30,700	14,500	17,300	44,600	65,000	-
Lead	10.3	17.5	25.4	36.9	51.5	63.0	25.4	31.6	99.2	171	190
Manganese	171	327	514	808	1,210	1,550	685	891	1,410	3,597	-
Mercury	0.001	0.004	0.016	0.057	0.179	0.354	0.056	-	1.07	0.3	-
Silver ^c	-	-	-	-	-	-	-	-	-	1.1	-
Zinc	16.0	37.0	66.3	119	200	274	66.3	93.6	559	280	296

^a The 95th percent UCL is the upper confidence limit on the geometric mean of the population. The 95th percent UCL could not be calculated for antimony, cadmium, mercury, and silver due to the large proportion (>50 percent) of non-detects in the data population.

^b The upper tolerance limit is the 95th percentile upper tolerance limit on the 95th percentile of the distribution and represents the upper limit of uncertainty on the upper bound of the background population.

^c A percentile range could not be calculated for silver because there was only one sample with concentrations above detection limits below a depth of 10 feet.

Notes:

Since the estimated percentile ranges presented in this table are based on regression curves, in some cases the minimum or maximum values for the data presented in Table 4-1 may be below or above the 5th and 95th percentile ranges, respectively, for a given chemical of potential concern.

All values from other studies presented as reported. Values calculated in the analysis of Upper Basin sediments presented in this technical memorandum are rounded to three significant figures.

Table 4-3
Summary Statistics for Analysis of Sediment Data from Lower Basin Core Samples

Metal	URSG RI/FS Data (USEPA 1998a) for Lower Basin Core Samples				
	Minimum ^a (mg/kg)	Maximum ^a (mg/kg)	N ^b	Non-Detects	r ^c
Antimony	<0.364	2.00	89	68	0.978
Arsenic	<0.328	17.1	131	4	0.984
Cadmium	<0.117	1.46	110	79	0.945
Copper	5.82	31.4	114	0	0.965
Iron	6,190	36,100	146	0	0.988
Lead	5.75	60.7	93	0	0.967
Manganese	25.5	510	122	0	0.993
Mercury ^c	-	-	283	160	-
Silver	<0.23	0.53	101	82	0.879
Zinc	16.7	123	77	0	0.966

^a "Less than" values are detection limits, indicating that the minimum value in the population was below detection limits.

^b N is the number of sample values used to calculate the regression line of plot of the normal standard variate versus the ln of concentration that was used to make the estimates presented in Table 4-4.

^c N and number of non-detects for mercury is for the entire population. There were no distinct inflection points on the cumulative frequency distribution (CFD) to estimate a lower bound (background) population. However, the shape of the CFD (Figure B-28) and the large proportion of non-detects suggest that the background population is below detection limits.

Note: All concentrations rounded to three significant figures.

Table 4-4
Comparison of Lower Basin Sediment Background Concentration Values Estimated from RI/FS Data (USEPA 2000b) with Estimates from Previous Studies of Lower Basin Sediments by LeJeune and Cacela (1999) and URSG (USEPA 1998a)

Metal	URSG RI/FS Data (USEPA 1998a) for Lower Basin Core Samples								LeJeune and Cacela (1999)	USEPA (1998a)	
	5th Percentile (mg/kg)	25th Percentile (mg/kg)	50th Percentile (mg/kg)	75th Percentile (mg/kg)	90th Percentile (mg/kg)	95th Percentile (mg/kg)	Geometric Mean (mg/kg)	95th Percent UCL* (mg/kg)	Upper Tolerance Limit* (mg/kg)	Lower Basin Alluvium ^b 95th Percentile (mg/kg)	Lower Basin Sediments 95th Percentile (mg/kg)
Antimony	0.685	0.912	1.11	1.36	1.63	1.81	0.652	-	1.98	-	5
Arsenic	2.78	4.58	6.48	9.18	12.6	15.1	6.34	6.90	17.1	-	35
Cadmium	0.036	0.095	0.187	0.369	0.678	0.976	0.233	-	1.27	0.88	8
Copper	9.34	13.0	16.3	20.5	25.2	28.5	16.3	17.2	31.1	-	45
Iron	9,910	14,000	17,600	22,300	27,600	31,400	17,600	18,500	34,000	-	-
Lead	12.3	19.3	26.3	35.8	47.3	56.0	26.3	28.4	63.9	343	150
Manganese	48.6	91.2	141	219	325	411	141	156	484	-	-
Mercury c	-	-	-	-	-	-	-	-	-	-	1
Silver	0.221	0.251	0.274	0.299	0.324	0.339	0.280	-	0.352	-	-
Zinc	31.0	45.2	58.9	76.6	97.1	112	58.9	63.2	127	236	220

* The 95th percent UCL is the upper confidence limit on the geometric mean of the population. The 95th percent UCL could not be calculated for antimony, cadmium, mercury, and silver due to the large proportion (>50 percent) of non-detects in the data population.

^b LeJeune and Cacela use the term alluvium in their analysis of these data. EPA considers the terms alluvium and sediment to be synonymous.

^c A percentile range could not be calculated for mercury because there was no clear inflection point on the cumulative frequency distribution (CFD) curve to estimate a lower bound (background) population. However, the shape of the pooled CFD (Figure B-28) and the large proportion of non-detects in the data population suggest that the background population is below detection limits.

Note: All values from other studies presented as reported. Values calculated in the analysis of Upper Basin sediments presented in this technical memorandum are rounded to three significant figures.

Table 4-5
Comparison of Estimated Soil Background Concentration Ranges in Spokane River Basin (WDOE 1994) to Spokane Basin Background Sediment Concentrations Estimated by Grosbois et al. (2000)

Metal	Spokane Basin Soil Background (WDOE 1994)								Grosbois et al. 2000
	5th Percentile (mg/kg)	25th Percentile (mg/kg)	50th Percentile (mg/kg)	75th Percentile (mg/kg)	90th Percentile (mg/kg)	95th Percentile (mg/kg)	Mean ^a (mg/kg)	95th Percent UCL ^a (mg/kg)	
Antimony ^d	-	-	-	-	-	-	-	-	5.2
Arsenic	1.66	2.95	4.39	6.53	9.34	11.6	4.39	5.27	16.5
Cadmium	0.149	0.251	0.361	0.519	0.720	0.876	0.361	0.43	1.21
Copper	5.18	9.94	13.4	18.2	23.9	28.1	14.4	16.1	27.1
Iron	12,200	15,500	18,300	21,600	25,000	27,400	18,300	19,700	31,700
Lead	7.46	9.39	11.0	12.9	14.9	16.2	11.0	11.9	18.7
Manganese	340	424	495	577	663	721	495	532	828
Mercury	0.003	0.007	0.012	0.020	0.032	0.041	0.012	0.01	0.065
Silver ^d	-	-	-	-	-	-	-	-	<0.5
Zinc	36.1	44.2	50.8	58.5	66.4	71.6	50.8	54.2	81.1
									89

^a All means are geometric means except copper. The arithmetic mean was calculated for copper because it has a normal data distribution. The UCLs are calculated on the geometric means for all COPCs except copper (arithmetic mean).

^b The upper tolerance limit is the 95th percentile upper tolerance limit on the 95th percentile of the distribution and represents the upper limit of uncertainty on the upper bound of the background population.

^c Geometric mean and mean values were not distinguished by Grosbois et al. (2000).

^d Ecology did not analyze its background samples for antimony or silver (WDOE 1994).

Note:

All values rounded to three significant figures.

Table 4-6
Median and Percentile Ranges for Background Dissolved Surface Water Concentrations
for Sub-Areas of the Upper Basin (USEPA 2000b)

Sub-Area of Upper Basin	Statistical Parameter	Hardness*	Metal ($\mu\text{g/L}$)									
			Antimony	Arsenic	Cadmium	Copper	Iron	Lead	Manganese	Mercury	Silver	Zinc
Upper South Fork Coeur d'Alene River	Median	26,950	0.25	0.53	0.06	0.63	7.50	0.17	1.50	0.10	0.06	6.13
	25th percentile	8,680	0.18	0.35	0.04	0.63	7.50	0.11	1.50	0.10	0.06	5.00
	75th percentile	47,632	0.25	0.61	0.10	0.88	7.50	0.29	1.75	0.10	0.08	10.70
	95th percentile	115,014	0.27	0.69	0.20	1.50	49.10	1.11	22.17	0.10	0.14	24.37
Page-Galena Mineral Belt	Median	39,972	0.69	0.61	0.16	0.88	12.00	0.40	2.07	0.10	0.06	7.49
	25th percentile	32,994	0.25	0.35	0.10	0.64	7.92	0.23	1.42	0.10	0.06	5.45
	75th percentile	58,108	0.99	0.75	0.19	1.00	19.14	0.73	2.68	0.10	0.08	19.11
	95th percentile	77,443	3.19	0.94	0.40	1.28	26.33	0.98	4.00	0.73	0.08	22.96
Pine Creek Drainage	Median	6,401	0.21	0.20	0.10	0.43	12.92	0.21	1.33	0.10	0.04	3.13
	25th percentile	6,328	0.15	0.11	0.03	0.22	7.10	0.19	1.11	0.10	0.02	2.49
	75th percentile	9,044	0.32	0.35	0.18	0.69	21.03	0.27	1.75	0.10	0.06	5.13
	95th percentile	15,301	0.48	0.51	0.20	0.84	25.86	0.41	2.35	0.10	0.08	8.79
Entire South Fork Coeur d'Alene River	Median	26,950	0.25	0.53	0.08	0.63	12.00	0.21	1.50	0.10	0.06	6.13
	25th percentile	7,504	0.16	0.23	0.04	0.53	7.30	0.15	1.26	0.10	0.04	3.74
	75th percentile	52,870	0.65	0.74	0.18	0.75	20.08	0.51	2.22	0.10	0.08	14.90
	95th percentile	111,257	2.92	0.91	0.38	1.48	46.82	1.09	20.35	0.66	0.14	24.23
National Ambient Water Quality Criteria (NAWQC) Criteria Continuous Concentrations (CCC)		NA	NA	150	0.9°	3.2°	1,000	0.66°	NA	0.77	NA	43°

* Hardness values from direct measurement and calculated derivation using Standard Method 2340B where hardness ($\mu\text{g/L}$) = $2.497[\text{Ca}^{++}] + 4.118[\text{Mg}^{++}]$.

° Freshwater NAWQC for cadmium, copper, lead, silver, and zinc are expressed as a function of hardness (mg/L of calcium carbonate [CaCO_3]) in the water column. Values above correspond to a hardness value of 30 mg/L as CaCO_3 .

Notes:

Ca - calcium

$\mu\text{g/L}$ - microgram per liter

Mg - magnesium

mg/L - milligram per liter

NA - not applicable or not available

Table 4-7
Mean Concentrations of Dissolved Metals in Samples Collected from the Mineralized Dudley Creek and Moore Gulch Watersheds in August 1999 (USEPA 2000b)

Metal	Dudley Creek ($\mu\text{g/L}$)	Duplicate Samples ($\mu\text{g/L}$)	Moore Gulch ($\mu\text{g/L}$)
Antimony	0.21	0.24	0.22
Arsenic	0.3	0.3	0.3
Cadmium	0.04	0.05	0.08
Copper	<1.10	<1.10	<1.10
Iron	6.02	22.9	7.03
Lead	0.02	0.13	0.05
Manganese	<0.80	0.84	<0.80
Mercury	0.11	<0.10	<0.10
Silver	<2.00	<2.00	<2.00
Zinc	1.74	<1.30	<1.30

Note: $\mu\text{g/L}$ - microgram per liter

5.0 CONCLUSIONS

Based on review of existing studies and additional data analysis, background concentration ranges for soils and sediments have been selected for the Upper Basin, Lower Basin, and Spokane River Basin. Background concentration ranges for surface water have been selected for use throughout the Coeur d'Alene Basin (including the Spokane River Basin). The following sections discuss the conclusions reached in background range selection.

5.1 UPPER BASIN

Based on the findings in this technical memorandum, the following conclusions are made:

1. Percentile ranges estimated by Gott and Cathrall (1980) from 8,700 soil samples provide the best estimate of background metal concentrations of soils in the Upper Basin. The selected background concentration ranges based on these data are presented in Table 5-1. The lower and upper bounds of the selected range are in brackets.
2. The background concentrations for sediments, developed from current analysis of the RI/FS data, provide the best estimates for Upper Basin sediments. The selected background concentration ranges are presented in Table 5-2. The lower and upper bounds of the selected range are in brackets. A background concentration range could not be developed for silver in Upper Basin sediments. Therefore, the background concentration for soil was selected, recognizing that these values are probably biased high.
3. Based on the analysis of RI/FS sediment data, the background metal concentrations for soil appear to be conservative estimates (i.e., to overestimate) of the background metal concentrations in sediment. Consequently, the RI/FS sediment data analysis supports the assertion of LeJeune and Cacela (1999) that "the most likely effect of the uncertainties (due to their reliance on Gott & Cathrall, 1980) is a bias toward overestimation of baseline conditions throughout the basin."

5.2 LOWER BASIN (INCLUDING COEUR D'ALENE LAKE)

The following conclusions are drawn regarding background concentration ranges in Lower Basin and lake sediments:

1. The current analysis of the RI/FS data provides the best estimates of background metal concentration ranges in Lower Basin and lake sediments. Selected background concentration ranges and additional statistics are provided in Table 5-3.
2. A background range could not be estimated for mercury because of the censoring of non-detect values. Therefore the Upper Basin mercury sediment values were selected, recognizing that these values are probably biased high.
3. For every metal (except iron), background sediment concentrations were lower than those estimated for Upper Basin sediments (Tables 4-2 and 4-4).
4. Sediment transported by the North Fork Coeur d'Alene River is much lower in metal content than sediment transported by the South Fork. Mixing of sediments at the confluence of the rivers results in lowering the high end of the background range in the Lower Basin. Given the additional sediment inputs to the lake (i.e., St. Joe River) a similar lowering is expected for lake sediments.

5.3 SPOKANE RIVER BASIN

The following conclusions are drawn regarding background sediment concentrations in the Spokane River Basin:

1. Historically, the Spokane River was not considered a depositional river system. Sedimentation in the river began after the installation of dams in the 20th century. Given that mining in the Coeur d'Alene Basin preceded the installation of dams, sediments encountered in the Spokane River basin cannot be assumed to represent background concentrations.
2. It is anticipated that the actual background sediment concentrations in the Spokane River Basin are between the concentrations promulgated by Ecology and those estimated for the Lower Basin in this memorandum. Given the similarities of the data sets, the Ecology soil ranges for the Spokane River Basin (WDOE 1994) were selected as background concentrations for Spokane River Basin sediments, recognizing that these values may be biased low (Table 5-4). No

Ecology data were available for antimony and silver. Consequently, the Lower Basin ranges for antimony and silver (Table 5-3) were selected as Spokane River Basin background for soils and sediments.

3. It is anticipated that sediments found downstream of Coeur d'Alene Lake in the Spokane River will have lower background concentrations than sediments found in the Upper Basin. Data from Grosbois et al. (2000) and Ecology (WDOE 1994) appear to support this conclusion (Tables 2-5, 2-6, and 4-5). However, data from Ecology and Grosbois may be biased low.

5.4 SURFACE WATER

The following conclusions are drawn regarding surface water concentrations in the Basin:

1. The selected background surface water concentrations for the 10 COPCs in the Upper Basin are presented in Table 5-5. The statistics reported in Table 5-5 need to be qualified because all of the distributions were affected by the high number of samples without detectable metal concentrations. In those instances, one-half of the detection limit was taken to represent the value for the metal in the sample.
2. For silver and mercury, it can only be said that background concentrations are likely to be less than the respective detection limits in the data summarized in Table 5-5.
3. For the eight other metals, there were enough detected values that the 75th and 95th percentiles have credibility, but the medians (except for zinc) and 25th percentiles were determined by one-half of the variable detection limits. Lead was detected in only 30 of 128 samples in the background data set. Zinc was detected in 91 of 128 samples, so the median is also based on a detected value.

Table 5-1
Selected Background Concentration Ranges for Metals in Upper Basin Soils
(Selected Lower and Upper Bounds in Brackets)

Metal	Upper Basin Soils (Gott and Cathrall 1980)			
	25th Percentile (mg/kg)	50th Percentile (mg/kg)	75th Percentile (mg/kg)	90th Percentile (mg/kg)
Antimony	[0.8]	1.1	2.9	[5.8]
Arsenic*	-	-	10	[22]
Cadmium	[0.5]	0.8	1.3	[2.7]
Copper	[21]	28	37	[53]
Iron	[27,000]	36,000	49,000	[65,000]
Lead	[28]	43	75	[171]
Manganese	[777]	1,333	2,242	[3,597]
Mercury	[0.05]	0.1	0.2	[0.3]
Silver	[0.4]	0.6	0.7	[1.1]
Zinc	[61]	95	161	[280]

* Gott and Cathrall (1980) did not develop a 25th percentile concentration for arsenic, so no lower bound on the range can be selected for this COPC

Notes:

All values presented as originally reported.

mg/kg - milligram per kilogram

UCL - upper confidence limit

Table 5-2
Selected Background Concentration Ranges for Metals in Upper Basin Sediments
(Selected Lower and Upper Bounds in Brackets)

Metal	5th Percentile (mg/kg)	25th Percentile (mg/kg)	50th Percentile (mg/kg)	75th Percentile (mg/kg)	90th Percentile (mg/kg)	95th Percentile (mg/kg)	Geometric Mean (mg/kg)	95%UCL on Geometric Mean (mg/kg)
Antimony	[0.597]	1.05	1.56	2.31	[3.30]	4.08	2.82	-
Arsenic	[1.34]	2.89	4.92	8.40	[13.6]	18.1	4.92	6.72
Cadmium	[0.043]	0.142	0.324	0.742	[1.56]	2.44	0.431	-
Copper	[6.71]	11.3	16.2	23.3	[32.3]	39.2	16.2	19.8
Iron	[6,850]	10,700	14,500	19,700	[26,000]	30,700	14,500	17,300
Lead	[10.3]	17.5	25.4	36.9	[51.5]	63.0	25.4	31.6
Manganese	[171]	327	514	808	[1,210]	1,550	685	891
Mercury	[0.001]	0.004	0.016	0.057	[0.179]	0.354	0.056	-
Silver ^b	-	[0.4]	0.6	0.7	[1.1]	-	-	-
Zinc	[16.0]	37.0	66.3	119	[200]	274	66.3	93.6

^a 95 percent upper tolerance limit on the 95th percentile of the population (includes non-detects in N)

^b Percentile ranges for silver could not be developed due to the high number of non-detects in the >15-foot-depth population. Therefore, the values for silver in Upper Basin soils were selected.

Notes:

All values rounded to three significant figures, except for the percentile values for silver as reported by Gott and Cathrall (1980)

mg/kg - milligram per kilogram

UCL - upper confidence limit

Table 5-3
Selected Background Concentrations for Metals in Lower Basin Sediments
(Selected Lower and Upper Bounds in Brackets)

Metal	5th Percentile (mg/kg)	25th Percentile (mg/kg)	50th Percentile (mg/kg)	75th Percentile (mg/kg)	90th Percentile (mg/kg)	95th Percentile (mg/kg)	Geometric Mean (mg/kg)	95% UCL on Geometric Mean (mg/kg)
Antimony	[0.685]	0.912	1.11	1.36	[1.63]	1.81	0.652	-
Arsenic	[2.78]	4.58	6.48	9.18	[12.6]	15.1	6.34	6.90
Cadmium	[0.036]	0.095	0.187	0.369	[0.678]	0.976	0.233	-
Copper	[9.34]	13.0	16.3	20.5	[25.2]	28.5	16.3	17.2
Iron	[9,910]	14,000	17,600	22,300	[27,600]	31,400	17,600	18,500
Lead	[12.3]	19.3	26.3	35.8	[47.3]	56.0	26.3	28.4
Manganese	[48.6]	91.2	141	219	[325]	411	141	156
Mercury ^b	[0.001]	-	-	-	-	0.354	0.056	-
Silver	[0.221]	0.251	0.274	0.299	[0.324]	0.339	0.280	-
Zinc	[31.0]	45.2	58.9	76.6	[97.1]	112	58.9	63.2

^a 95 percent upper tolerance limit on the 95th percentile of the population (includes non-detects in N)

^b Percentile ranges for mercury could not be developed due to the high number of non-detects in the lower cumulative frequency distribution population.

Therefore, the values for mercury in Upper Basin sediments were selected, recognizing that they are biased high.

Notes:

All values rounded to three significant figures.

mg/kg - milligram per kilogram

UCL - upper confidence limit

Table 5-4
Selected Background Concentrations for Metals in Spokane River Basin Soils
(Selected Lower and Upper Bounds in Brackets)

Metal	5th Percentile (mg/kg)	25th Percentile (mg/kg)	50th Percentile (mg/kg)	75th Percentile (mg/kg)	90th Percentile (mg/kg)	95th Percentile (mg/kg)	Mean ^a (mg/kg)	95th Percent UCL ^a (mg/kg)
Antimony ^b	[0.685]	0.912	1.11	1.36	[1.63]	1.81	0.652	-
Arsenic	[1.66]	2.95	4.39	6.53	[9.34]	11.6	4.39	5.27
Cadmium	[0.149]	0.251	0.361	0.519	[0.720]	0.876	0.361	0.43
Copper	[5.18]	9.94	13.4	18.2	[23.9]	28.1	14.4	16.1
Iron	[12,200]	15,500	18,300	21,600	[25,000]	27,400	18,300	19,700
Lead	[7.46]	9.39	11.0	12.9	[14.9]	16.2	11.0	11.9
Manganese	[340]	424	495	577	[663]	721	495	532
Mercury	[0.003]	0.007	0.012	0.020	[0.032]	0.041	0.012	0.01
Silver ^b	[0.221]	0.251	0.274	0.299	[0.324]	0.339	0.280	-
Zinc	[36.1]	44.2	50.8	58.5	[66.4]	71.6	50.8	81.1

^a All means are geometric means except copper. The arithmetic mean was calculated for copper because it has a normal data distribution. The 95th percent UCLs are calculated on the geometric means for all COPCs except copper (95th UCL on the arithmetic mean).

^bEcology soil samples were not analyzed for antimony or silver (WDOE 1994). Therefore, the Lower Basin sediment values were selected, recognizing that they are biased high. The 95th percent UCL could not be calculated for antimony and silver in Lower Basin sediments due to the high percentage of non-detects in the data population.

Notes:

All values rounded to three significant figures.

mg/kg - milligram per kilogram

UCL - upper confidence limit

Table 5-5
Selected Background Concentrations of Metals in Surface Waters of the Coeur d'Alene Basin
(Selected Lower and Upper Bounds in Brackets)

Statistical Parameter	Metal (µg/L)									
	Antimony	Arsenic	Cadmium	Copper	Iron	Lead	Manganese	Mercury	Silver	Zinc
Median	0.25	0.53	0.08	0.63	12.00	0.21	1.50	0.10	0.06	6.13
25th percentile	[0.16]	[0.23]	[0.04]	[0.53]	[7.30]	[0.15]	[1.26]	[0.10]	[0.04]	[3.74]
75th percentile	0.65	0.74	0.18	0.75	20.08	0.51	2.22	0.10	0.08	14.90
95th percentile	[2.92]	[0.91]	[0.38]	[1.48]	[46.82]	[1.09]	[20.35]	[0.66]	[0.14]	[24.23]

Notes:

µg/L - microgram per liter

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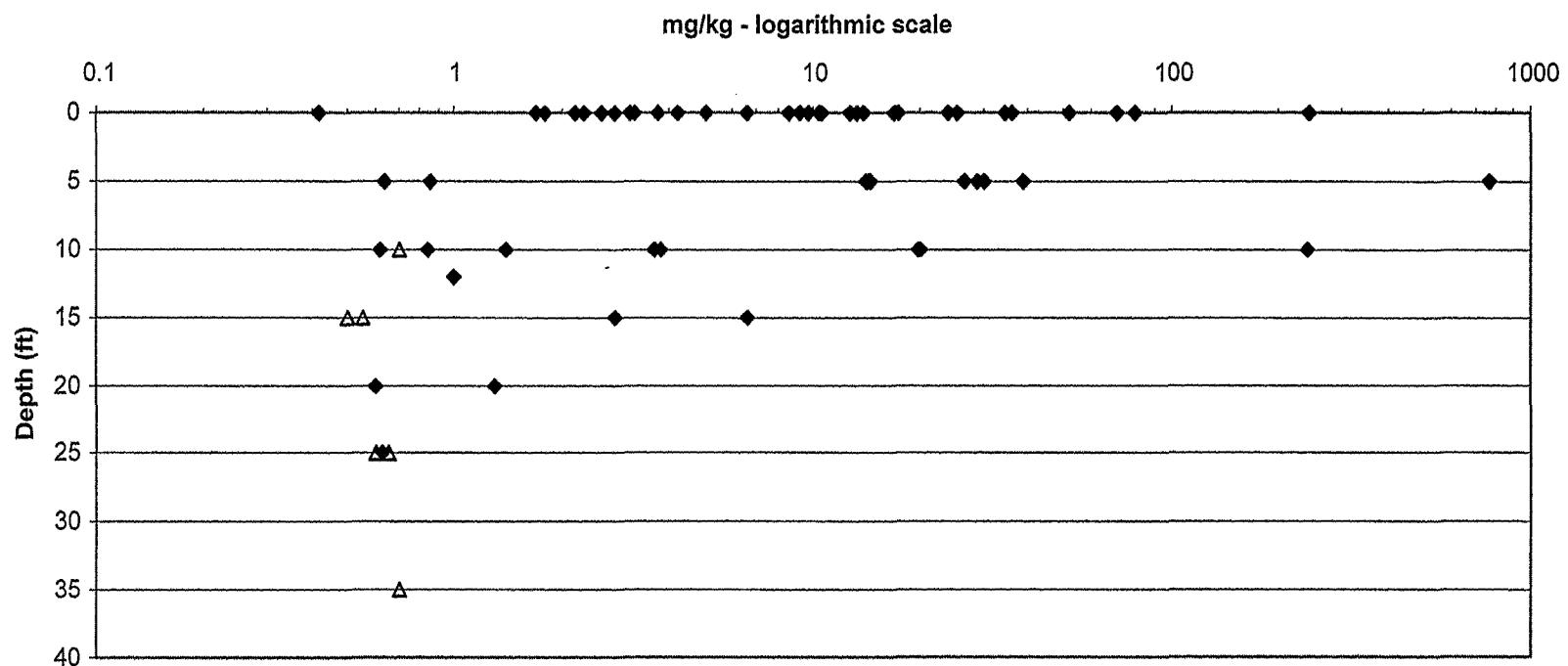
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APPENDIX A

Support Figures for Section 3, Methodology



- ◆ Detected or estimated concentrations
- △ Nondetected concentrations, $\frac{1}{2}$ sample quantitation limit

Note: Locations CC437, NM421, NM422, NM423, and NM444, and high-concentration estimated nondetected concentrations (UJ) excluded

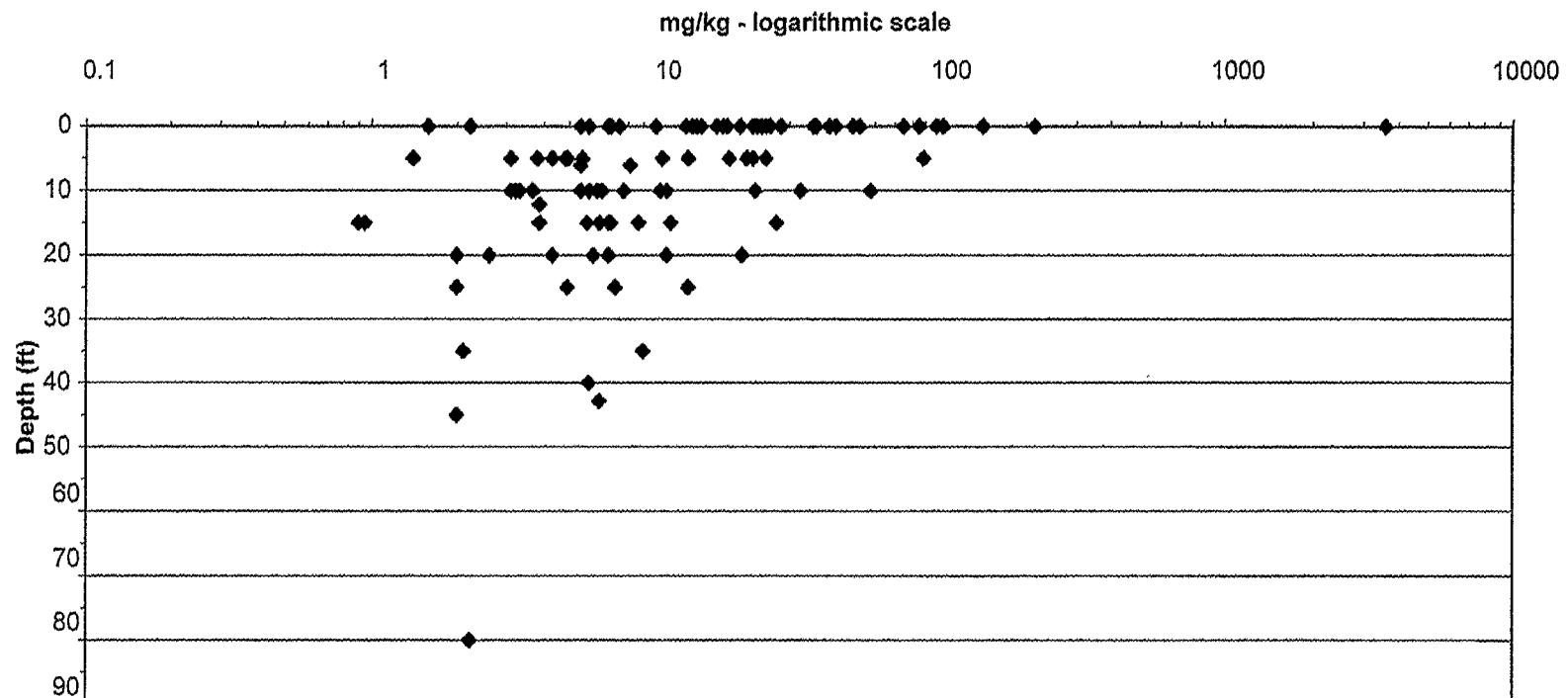


027-RI-CO-102Q
Coeur d'Alene Basin RI/FS
BACKGROUND TECHNICAL
MEMORANDUM

Doc Control:
Generation: 1

Background Series
4/6/01

Figure A-1
Antimony (Sb) Sediment Concentration Versus Depth—Upper Basin Borings



- ◆ Detected or estimated concentrations
- △ Nondetected concentrations, ½ sample quantitation limit

Note: Locations CC437, NM421, NM422, NM423, and NM444 excluded

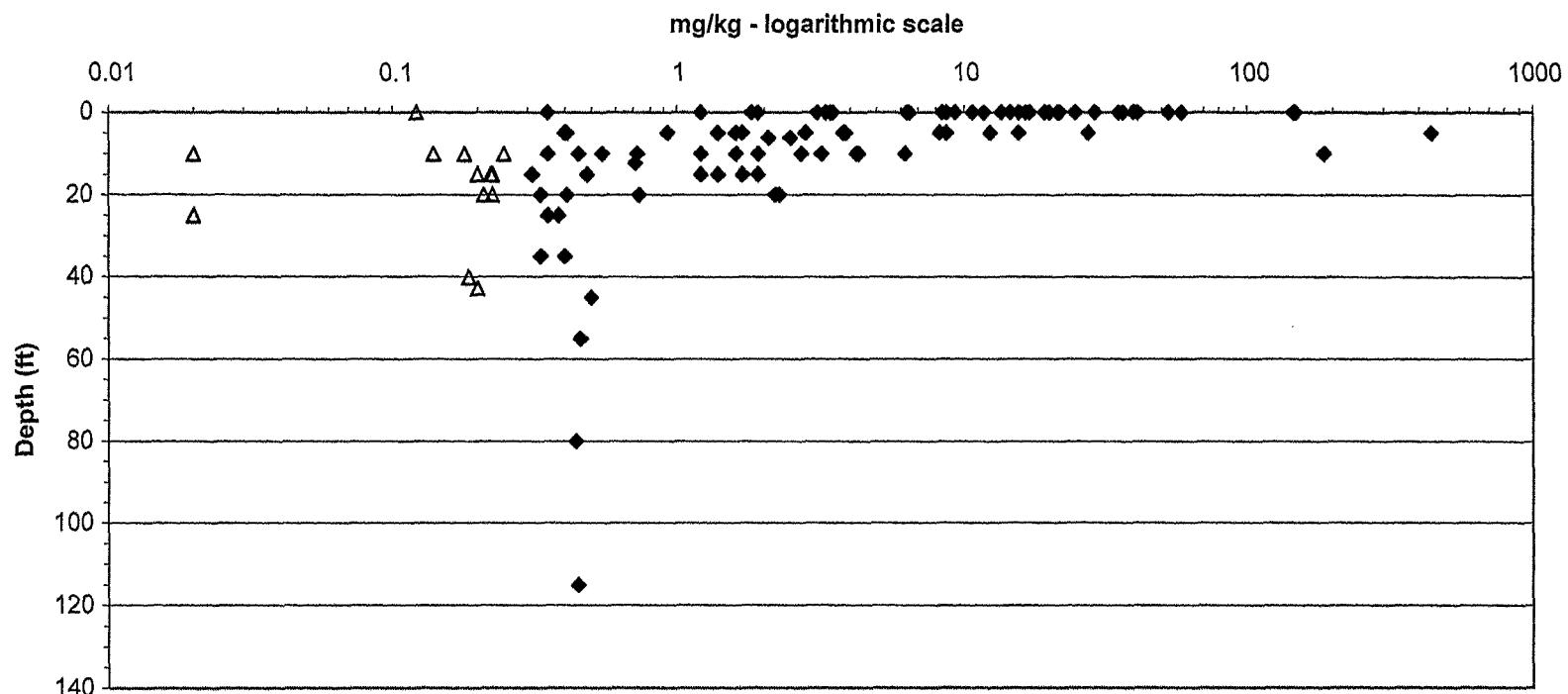


027-RI-CO-102Q
Coeur d'Alene Basin RI/FS
BACKGROUND TECHNICAL
MEMORANDUM

Doc Control:
Generation: 1

Background Series
4/6/01

Figure A-2
Arsenic (As) Sediment Concentration Versus Depth—Upper Basin Borings



- ◆ Detected or estimated concentrations
- △ Nondetected concentrations, $\frac{1}{2}$ sample quantitation limit

Note: Locations NM421, NM422, NM423, and NM444 excluded

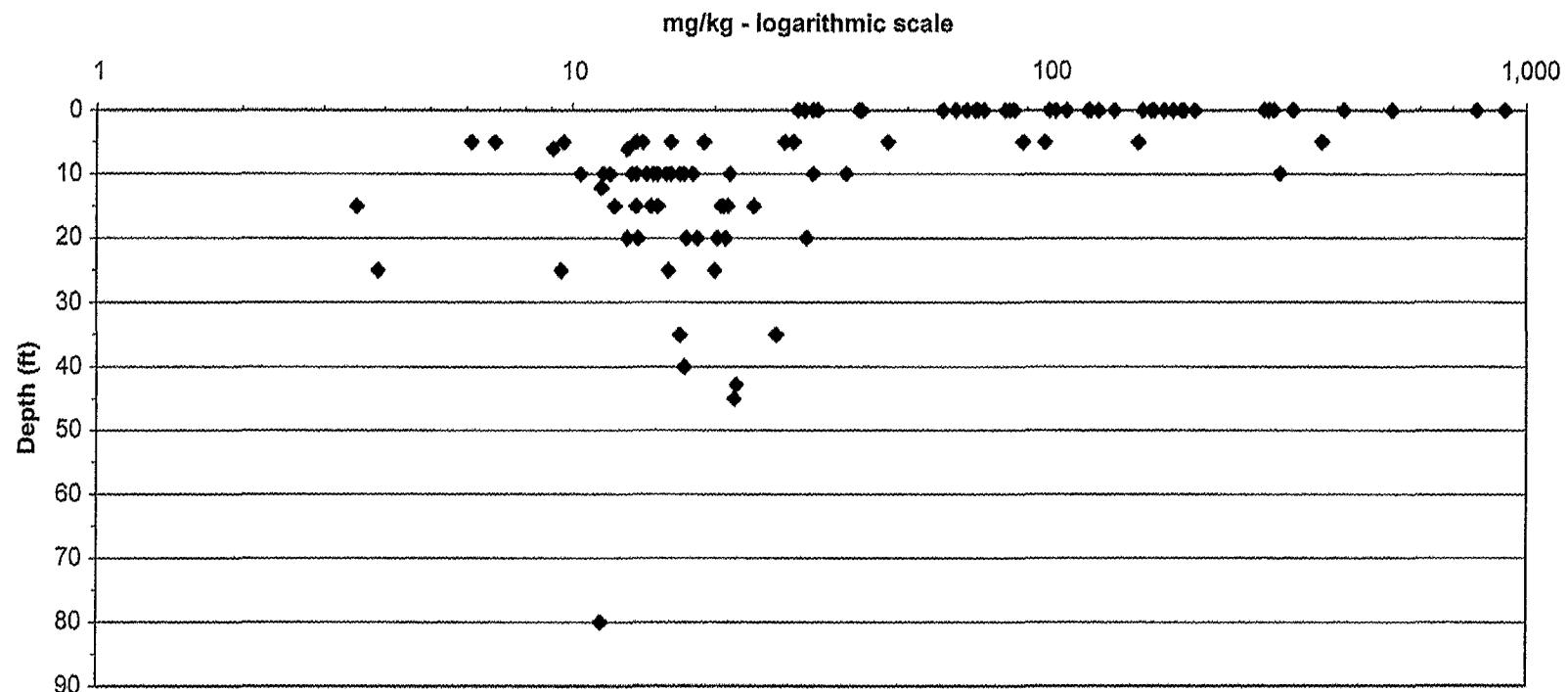


027-RI-CO-102Q
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BACKGROUND TECHNICAL
MEMORANDUM

Doc Control:
Generation: 1

Background Series
4/6/01

Figure A-3
Cadmium (Cd) Sediment Concentration Versus Depth—Upper Basin Borings



◆ Detected or estimated concentrations

Note: Locations CC437, NM421, NM422, NM423, and NM444 excluded

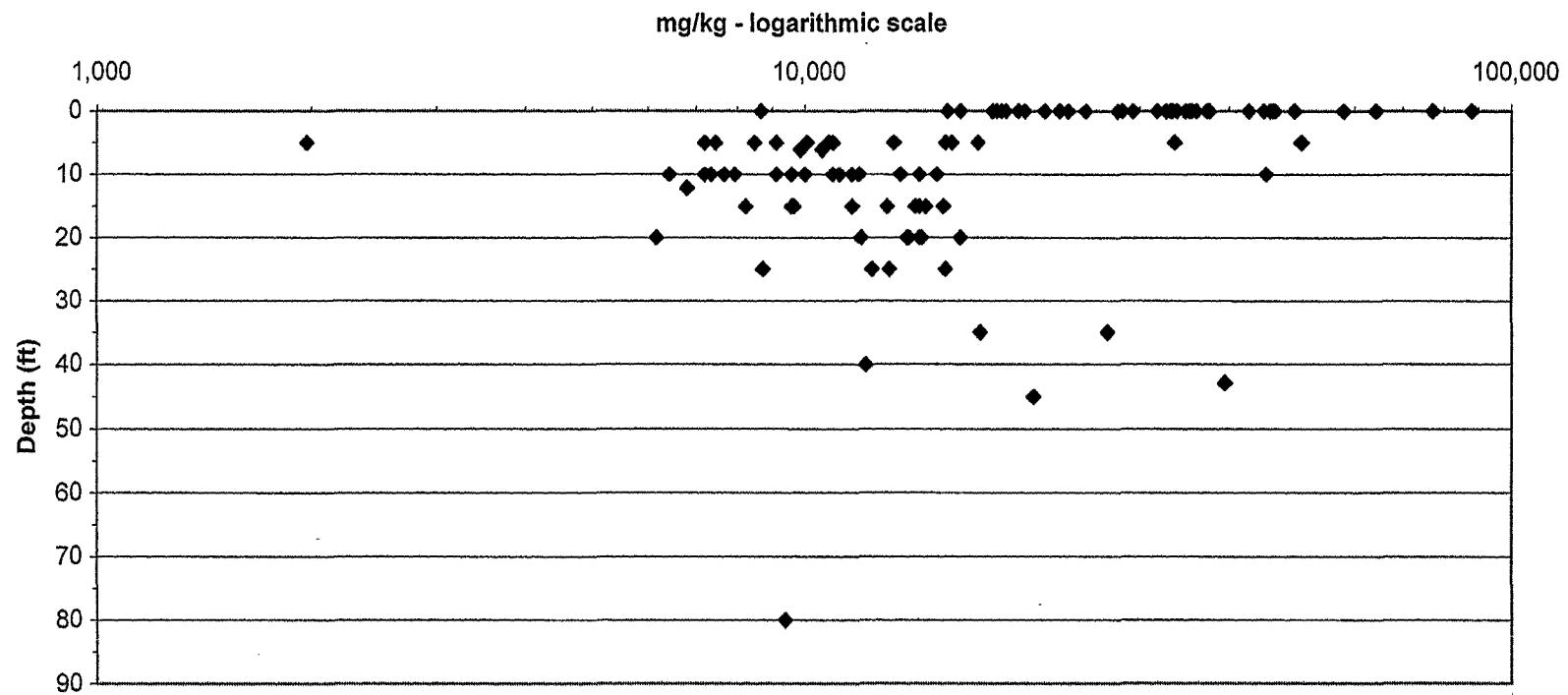


027-RI-CO-102Q
Coeur d'Alene Basin RI/FS
BACKGROUND TECHNICAL
MEMRANDUM

Doc Control:
Generation: 1

Background Series
4/6/01

Figure A-4
Copper (Cu) Sediment Concentration Versus Depth—Upper Basin Borings



◆ Detected or estimated concentrations

Note: Locations CC437, NM421, NM422, NM423, and NM444 excluded

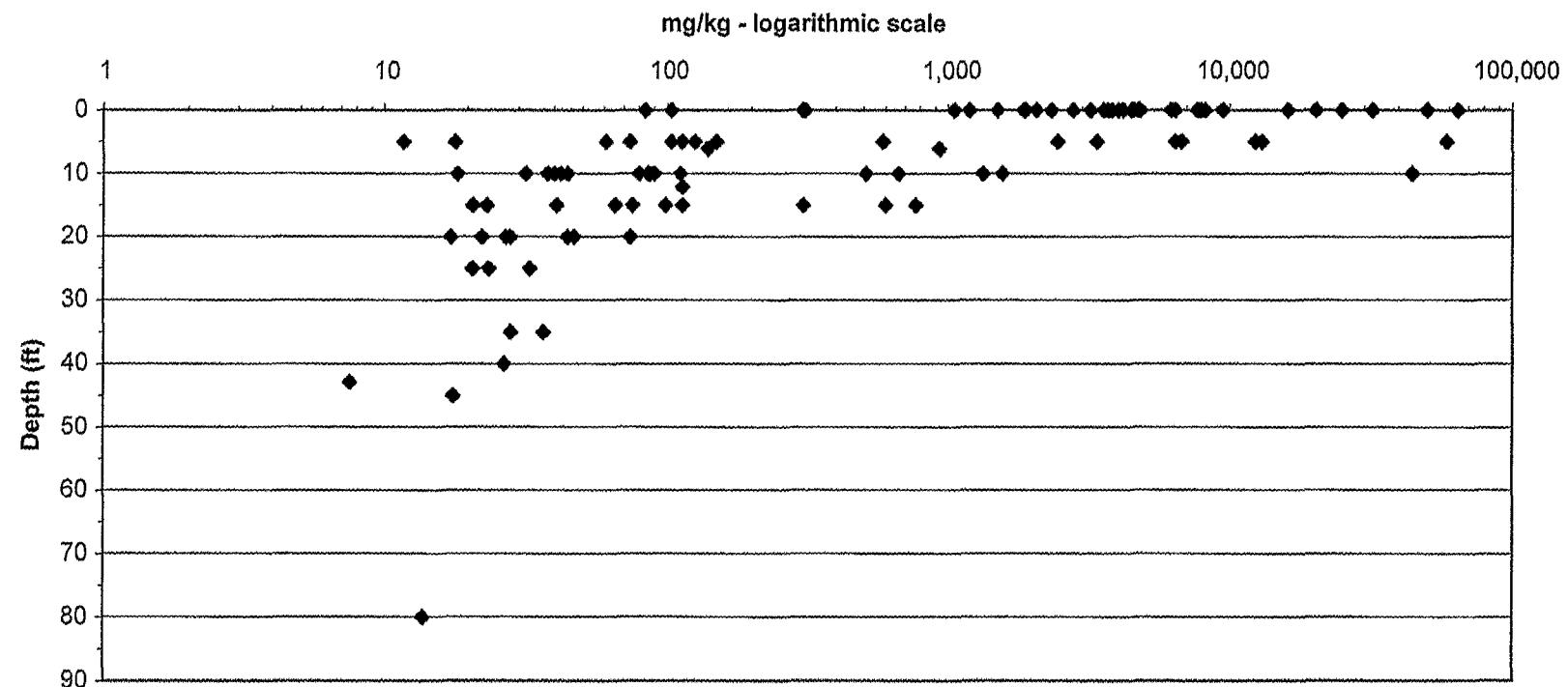


027-RI-CO-102Q
Coeur d'Alene Basin RI/FS
BACKGROUND TECHNICAL
MEMORANDUM

Doc Control:
Generation: 1

Background Series
4/6/01

Figure A-5
Iron (Fe) Sediment Concentration Versus Depth—Upper Basin Borings



◆ Detected or estimated concentrations

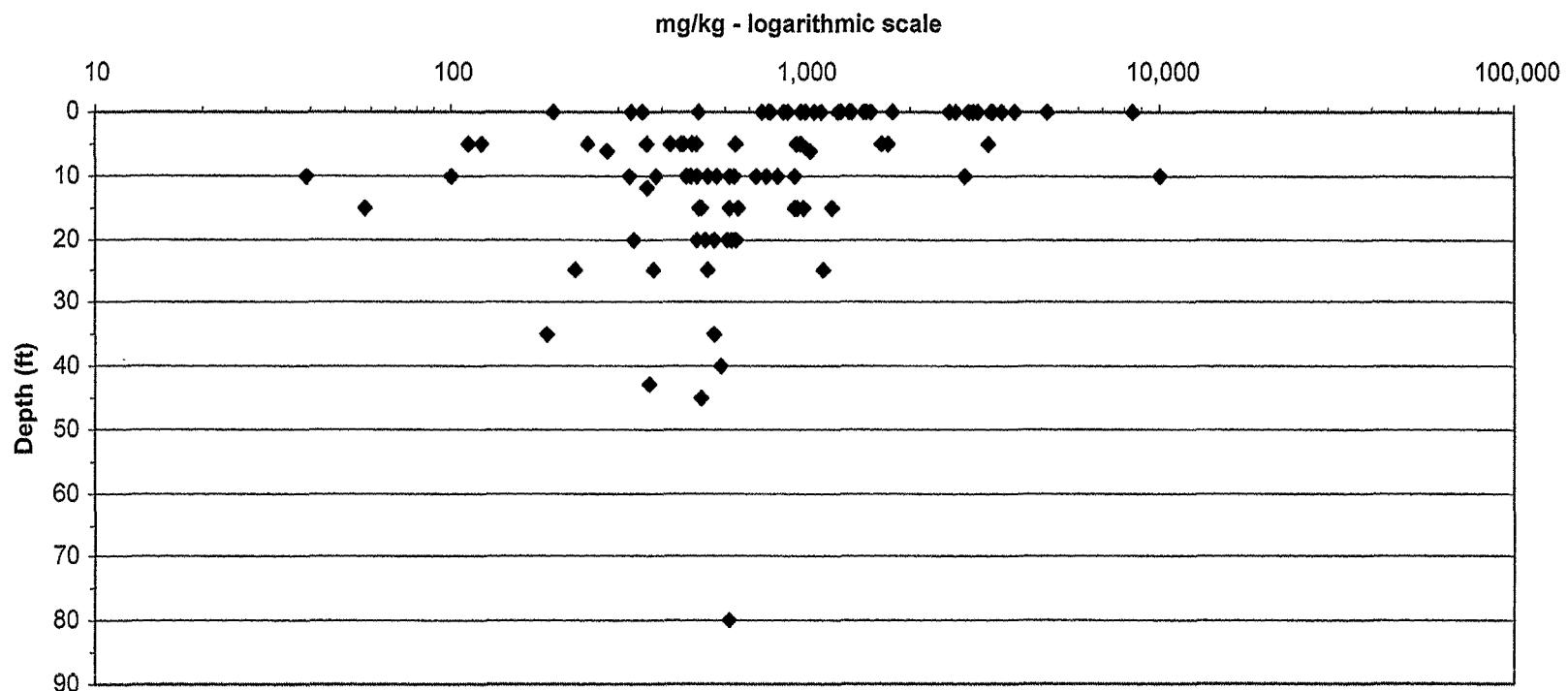
Note: Locations CC437, NM421, NM422, NM423, and NM444 excluded



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Figure A-6
Lead (Pb) Sediment Concentration Versus Depth—Upper Basin Borings



◆ Detected or estimated concentrations

Note: Locations NM421, NM422, NM423, and NM444 excluded

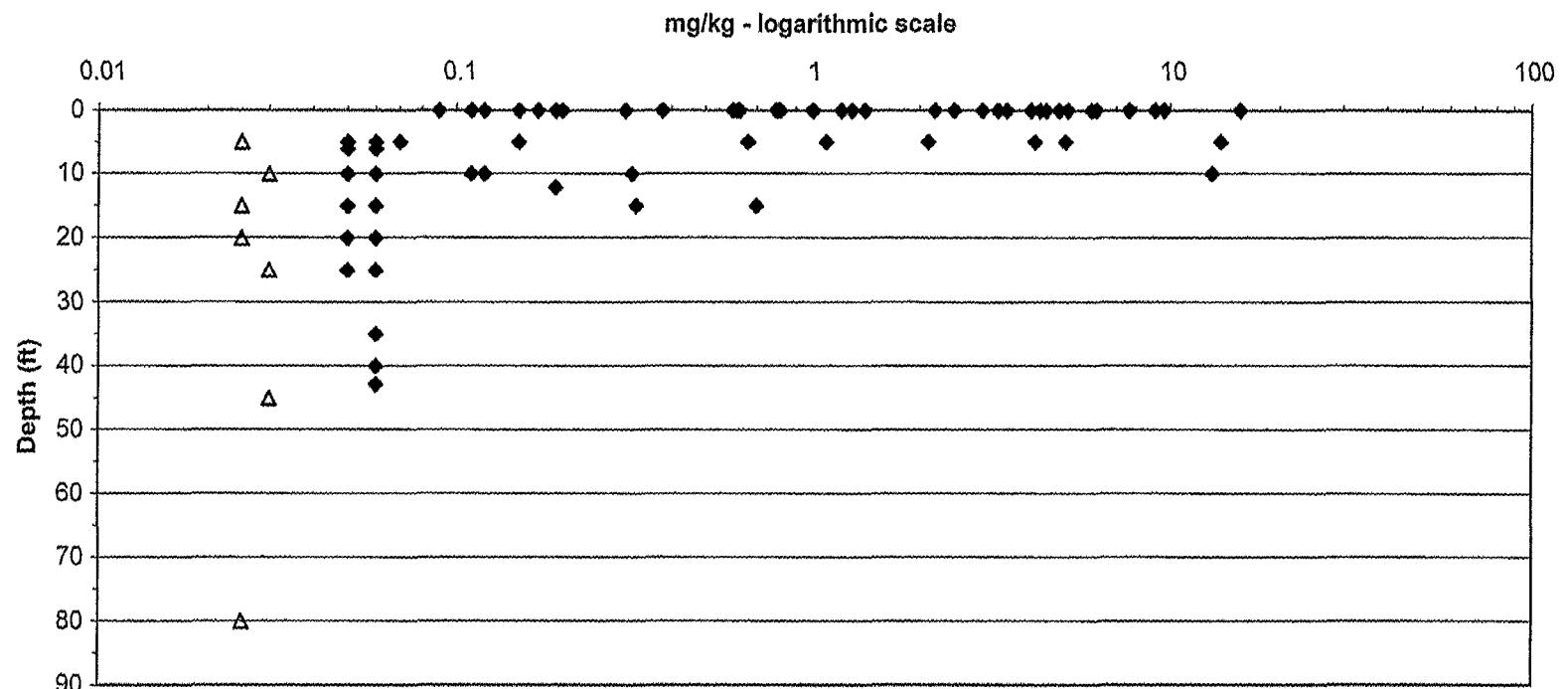


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Figure A-7
Manganese (Mn) Sediment Concentration Versus Depth—Upper Basin Borings



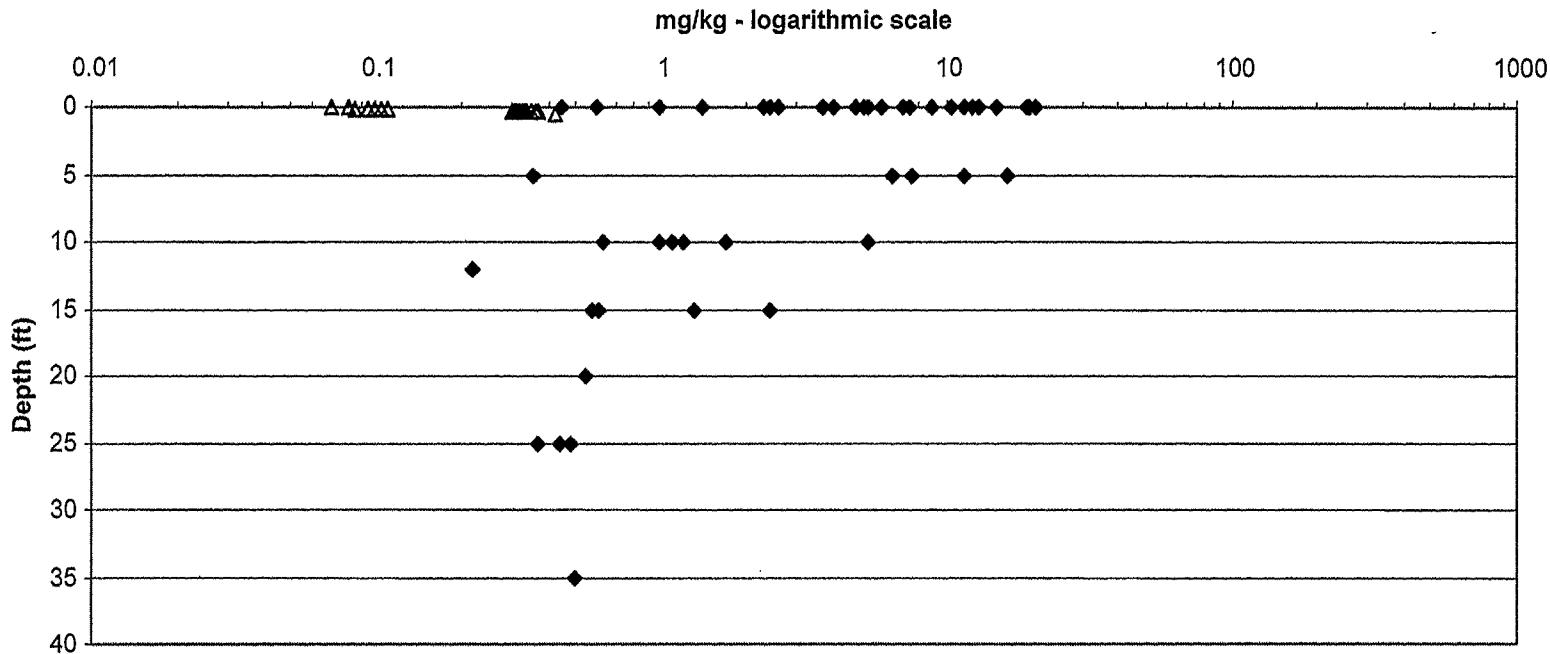
Note. Locations CC437, NM421, NM422, NM423, and NM444 excluded



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Figure A-8
Mercury (Hg) Sediment Concentration Versus Depth—Upper Basin Borings



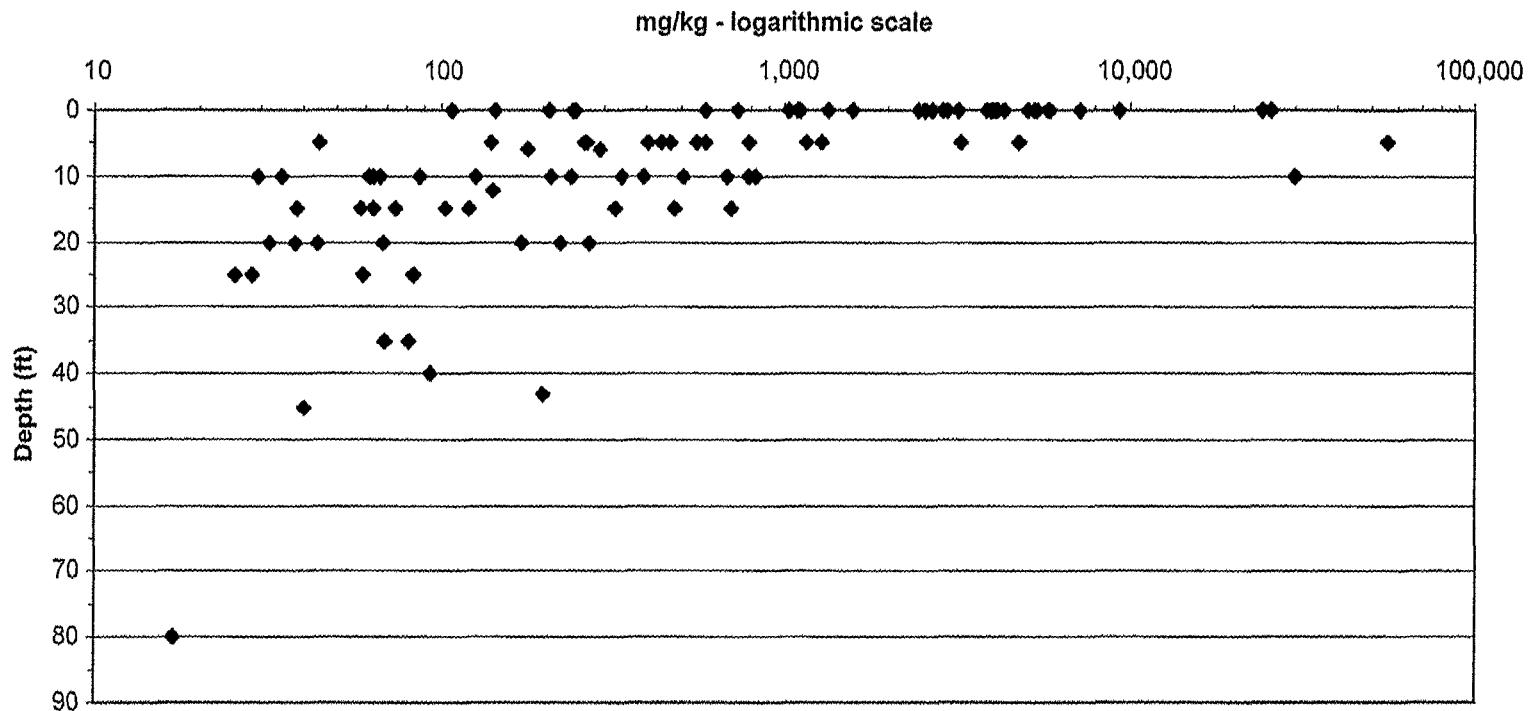
Note: Locations CC437, NM421, NM422, NM423, and NM444 excluded



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Figure A-9
Silver (Ag) Sediment Concentration Versus Depth—Upper Basin Borings



◆ Detected or estimated concentrations

Note: Locations CC437, NM421, NM422, NM423, and NM444 excluded

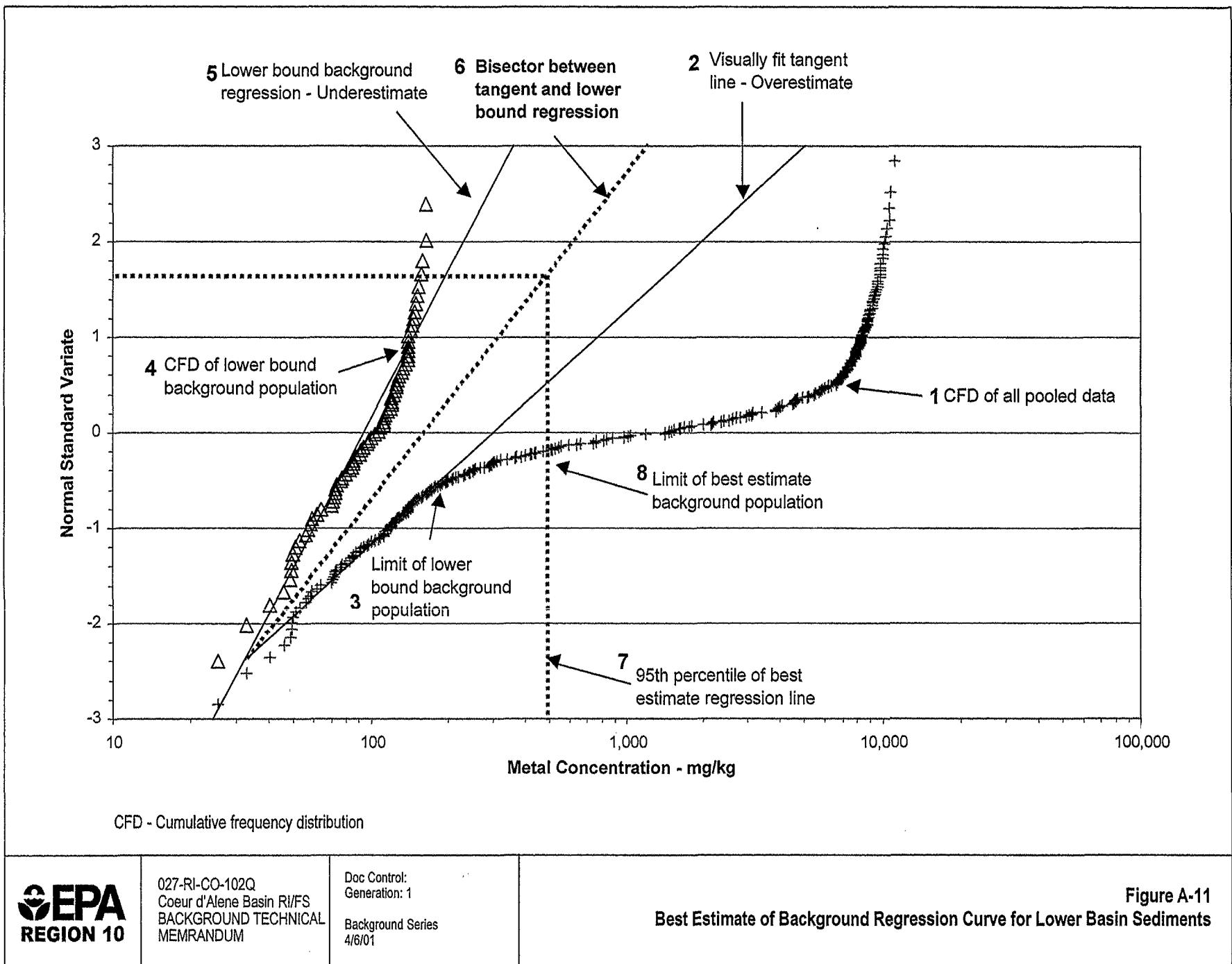


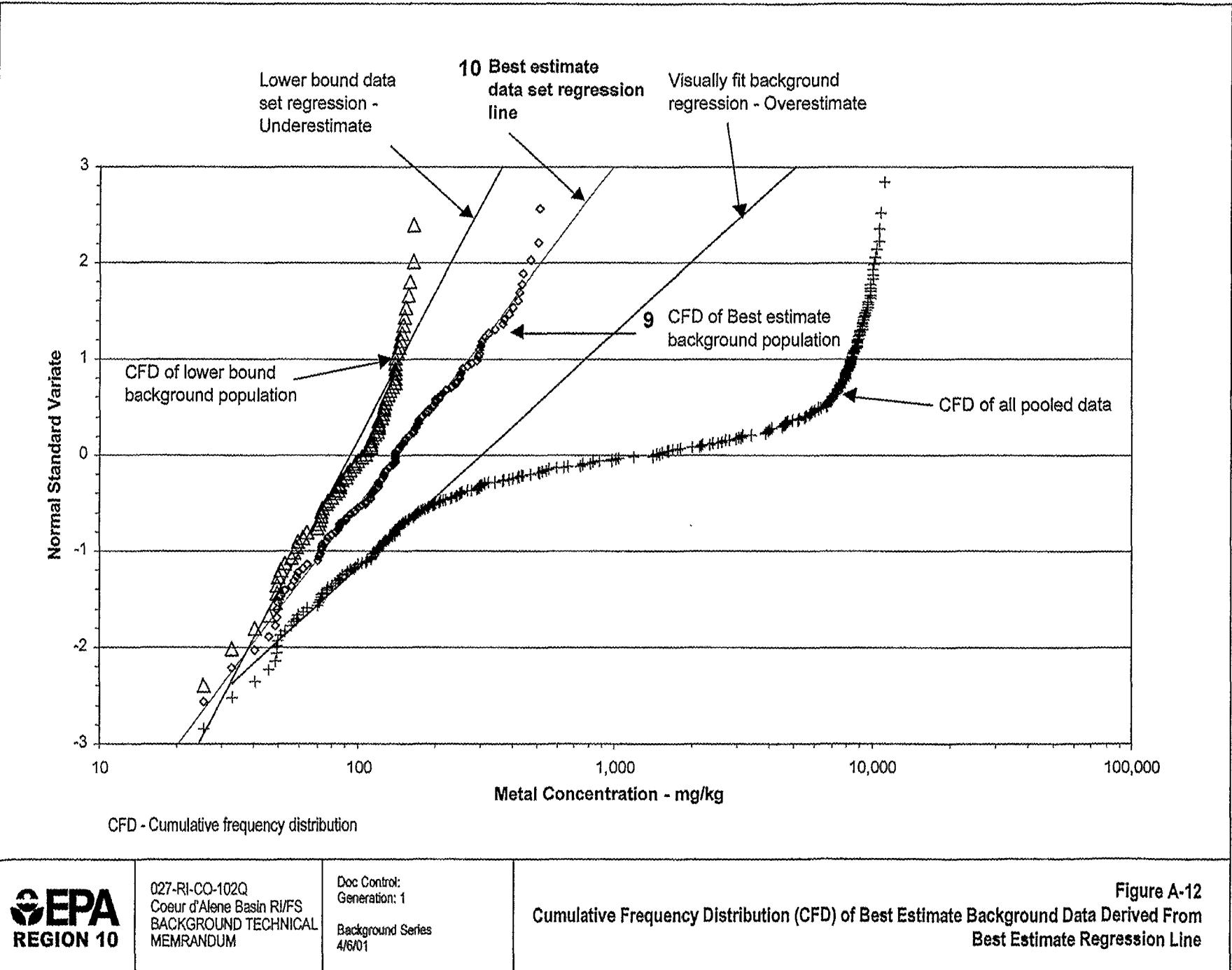
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Coeur d'Alene Basin RI/FS
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Doc Control:
Generation: 1

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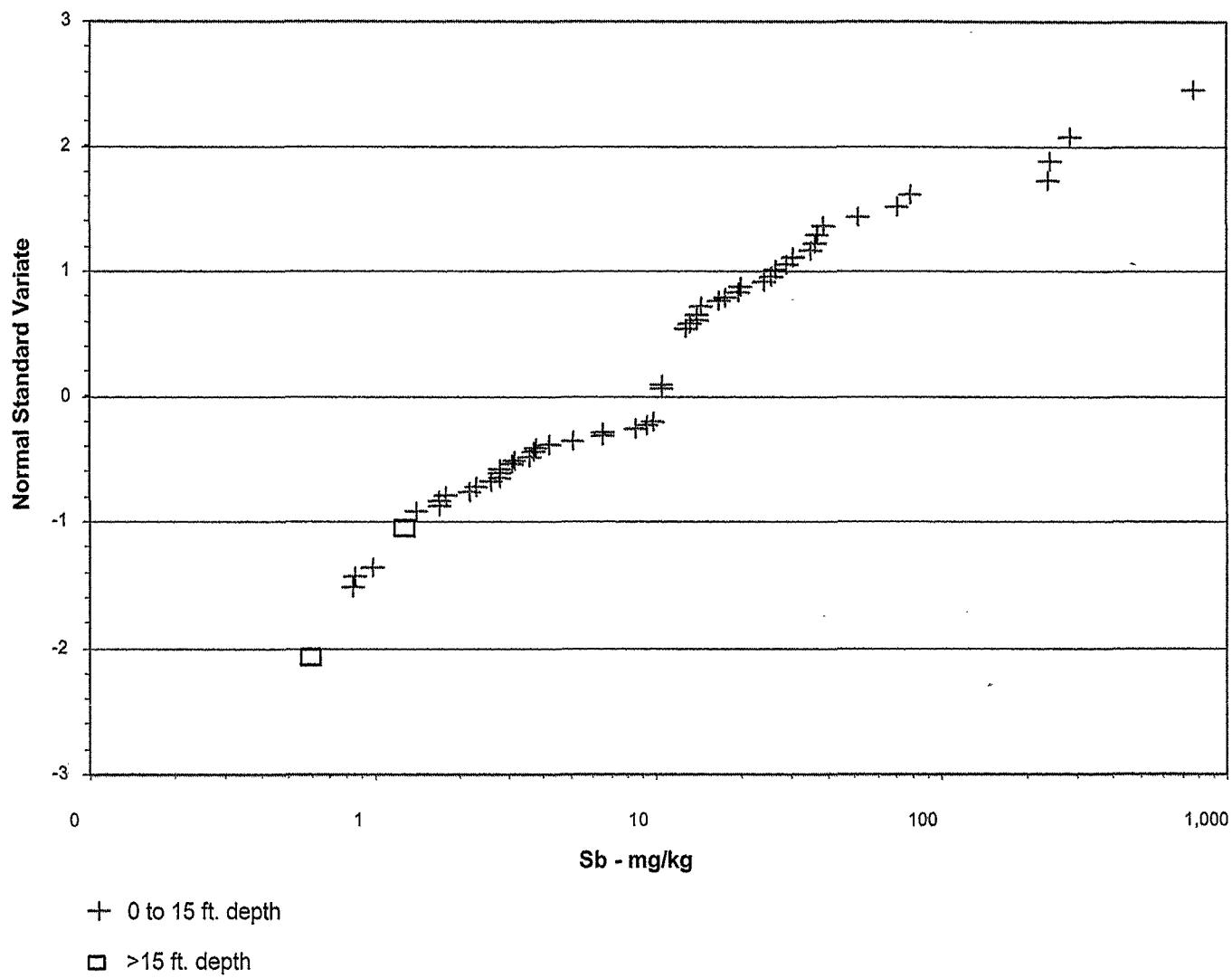
Figure A-10
Zinc (Zn) Sediment Concentration Versus Depth—Upper Basin Borings





APPENDIX B

Support Figures for Section 4, Results

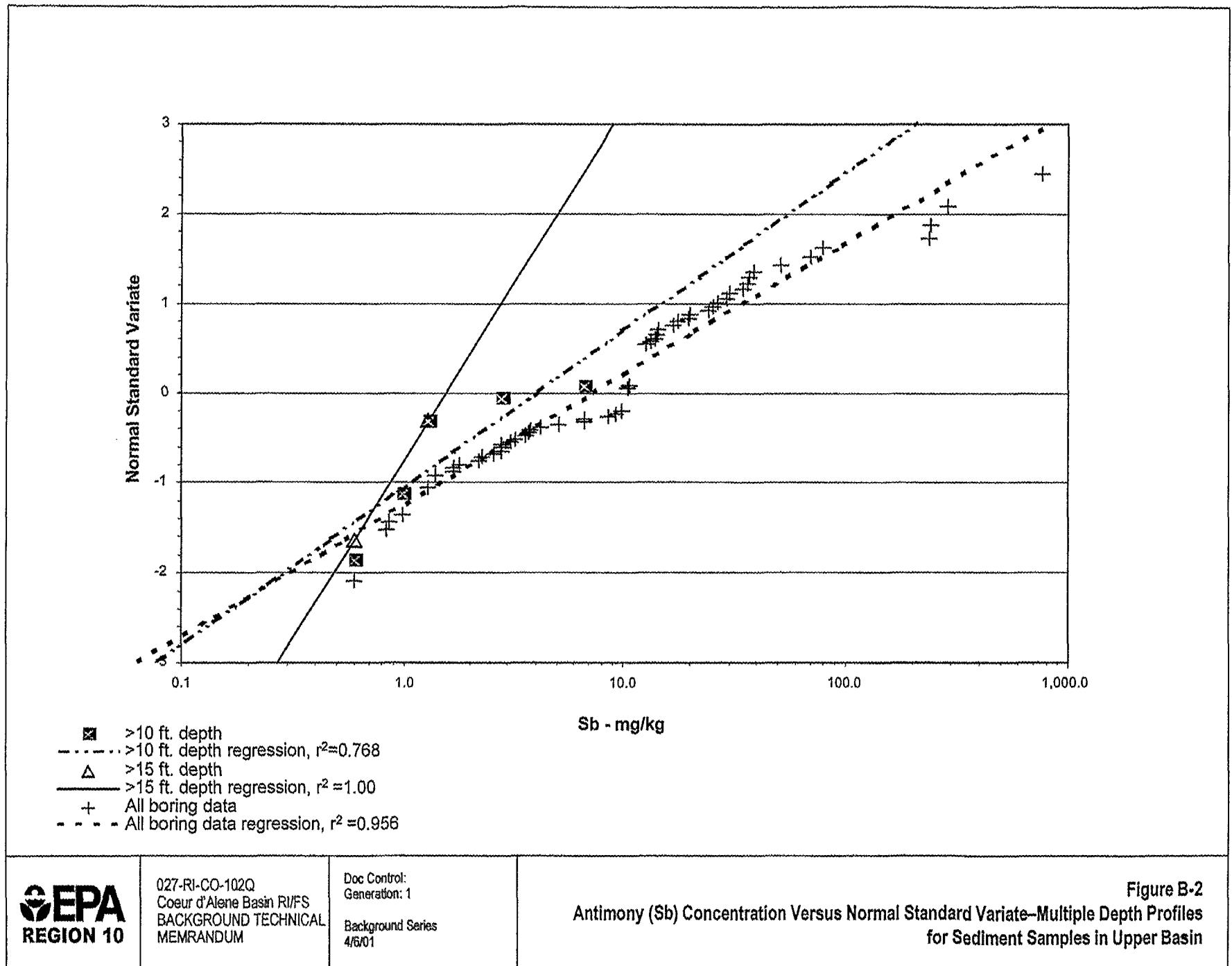


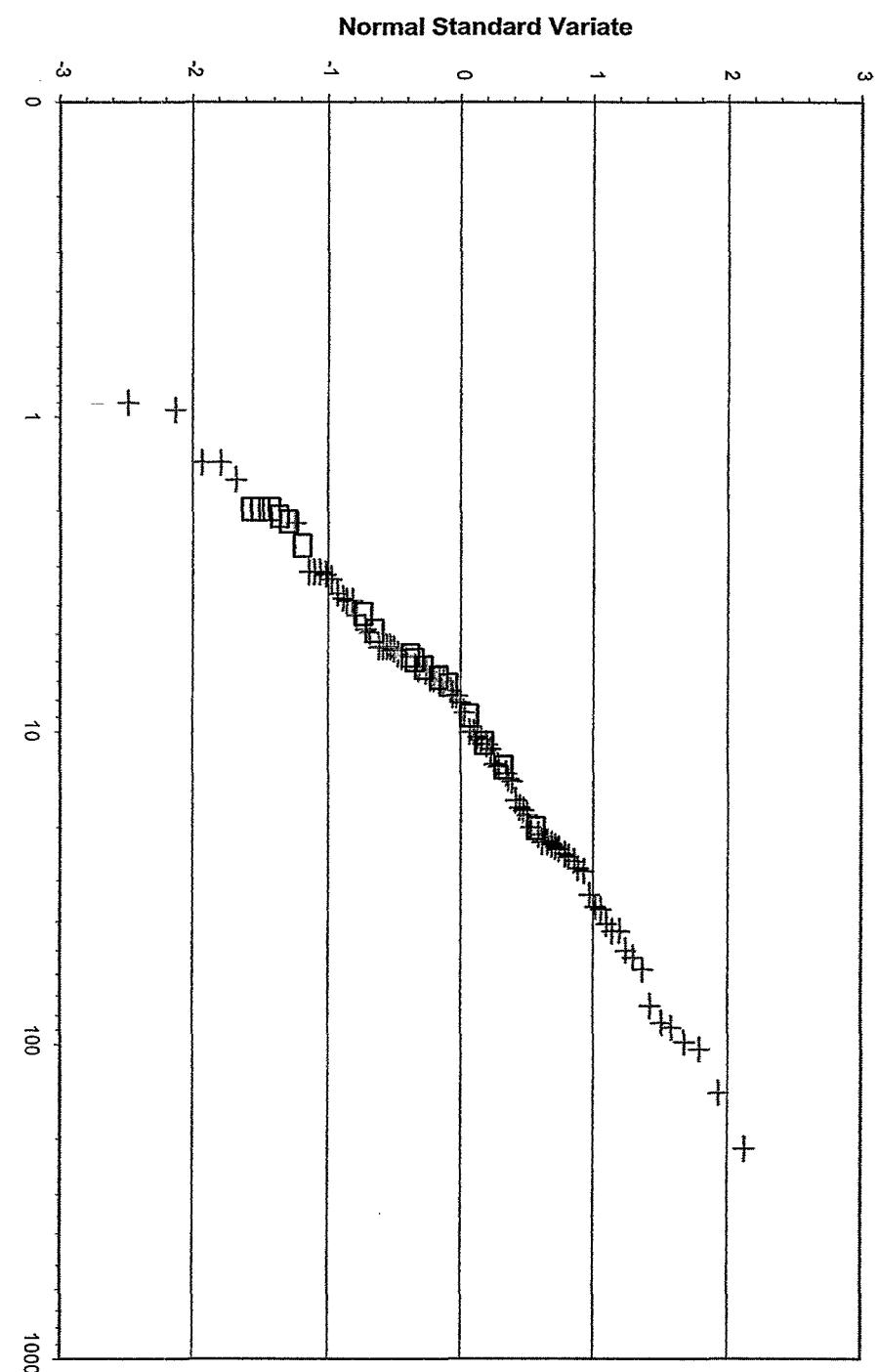
027-RI-CO-102Q
Coeur d'Alene Basin RI/FS
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Generation: 1

Background Series
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Figure B-1
Antimony (Sb) Concentration Versus Normal Standard Variate—Samples From 0 to 15 Feet Depth and From Greater Than 15 Feet Depth





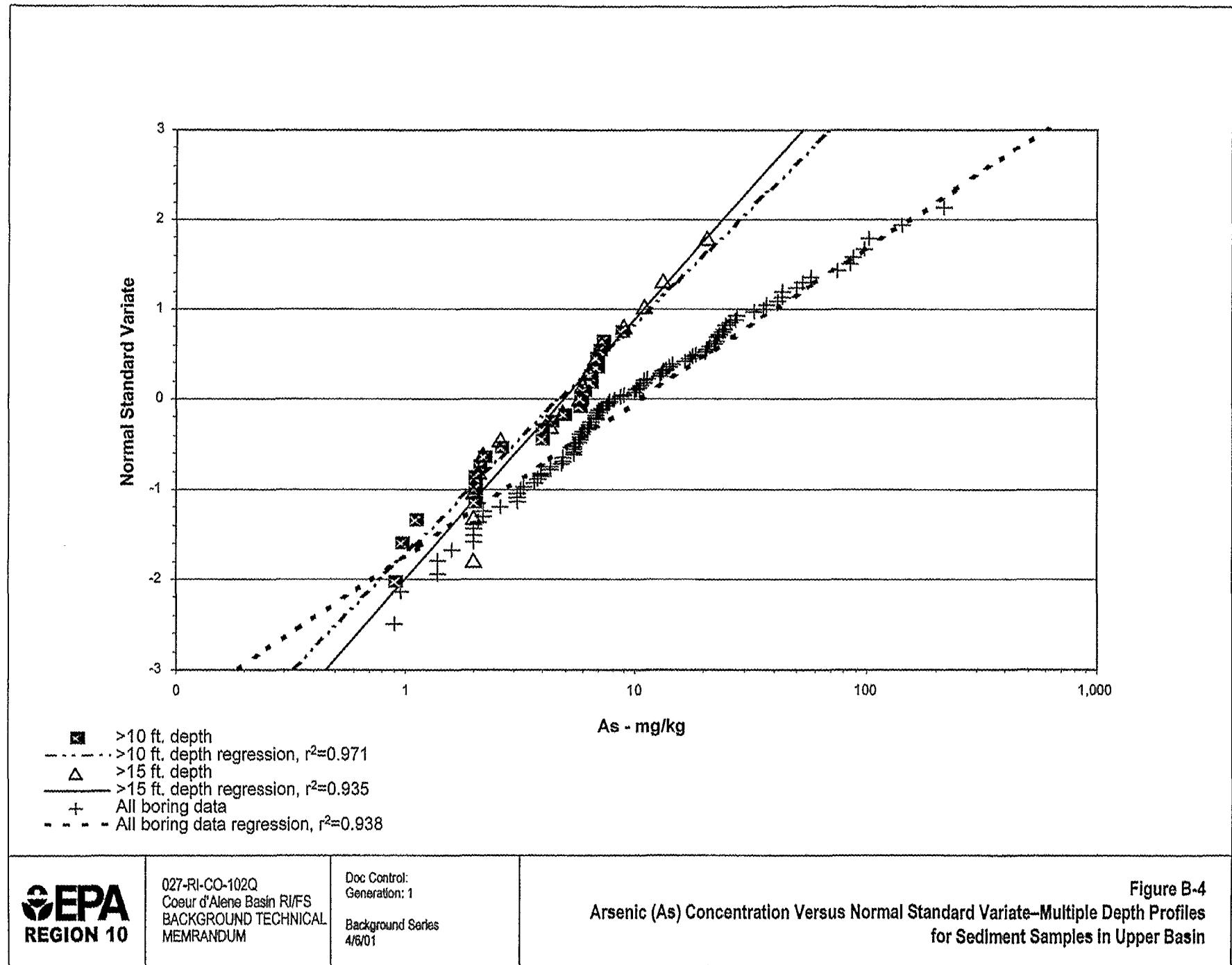
 EPA
REGION 10

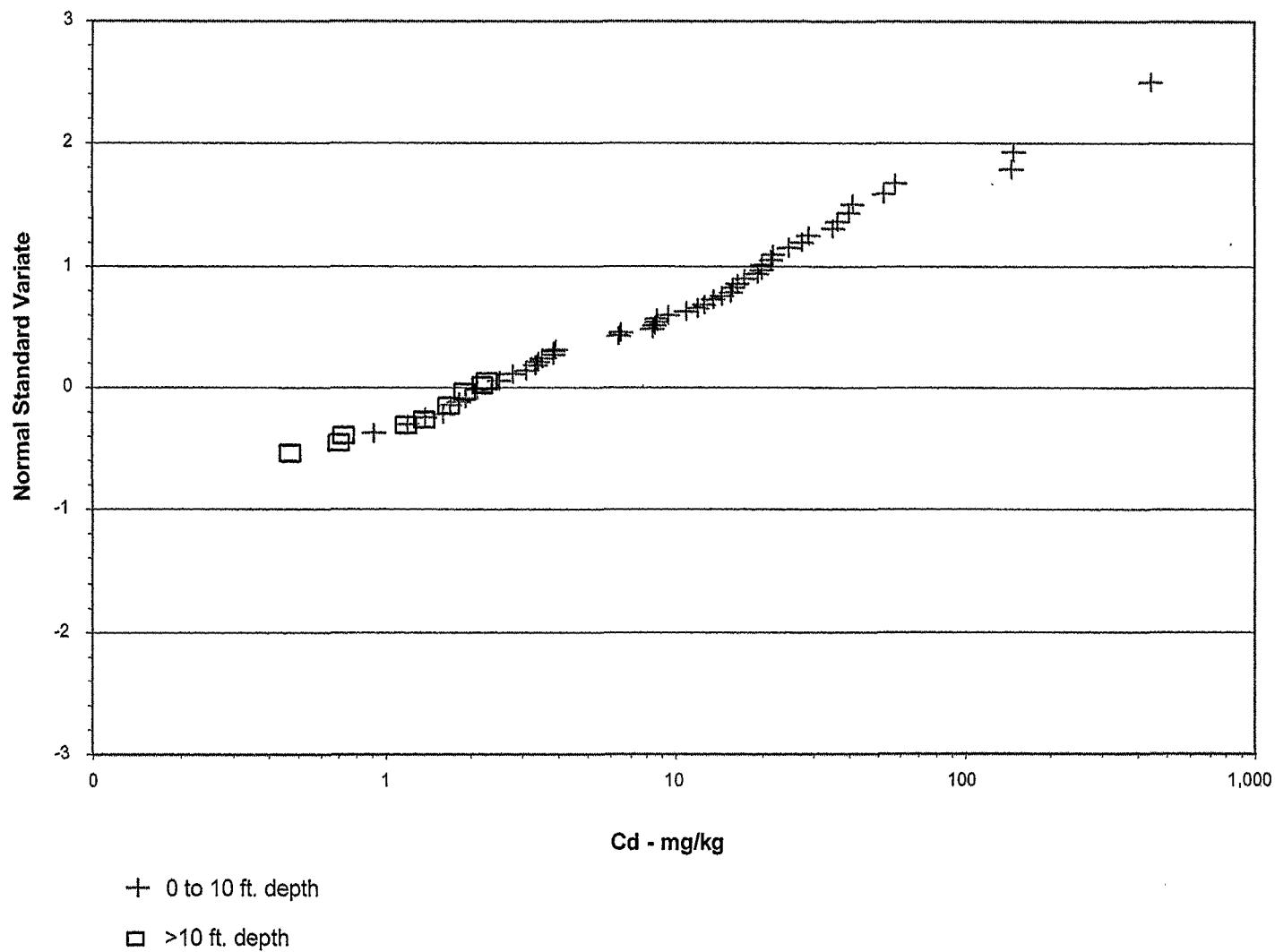
027-RI-CO-1020
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Figure B-3 Arsenic (As) Concentration Versus Normal Standard Variate—Samples From 0 to 15 Feet Depth and From Greater Than 15 Feet Depth

0 to 15 Feet Depth and From Greater Than 15 Feet Depth

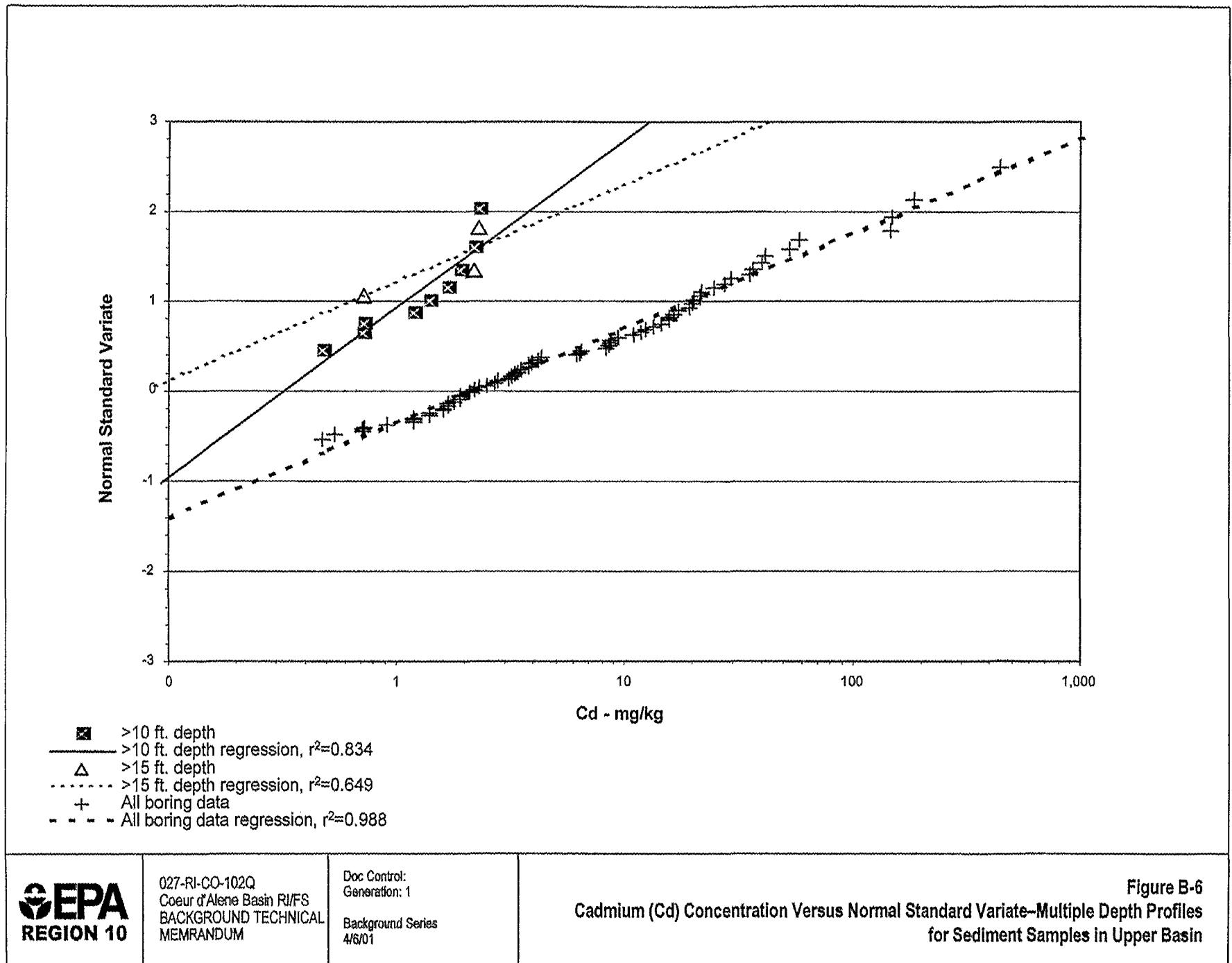


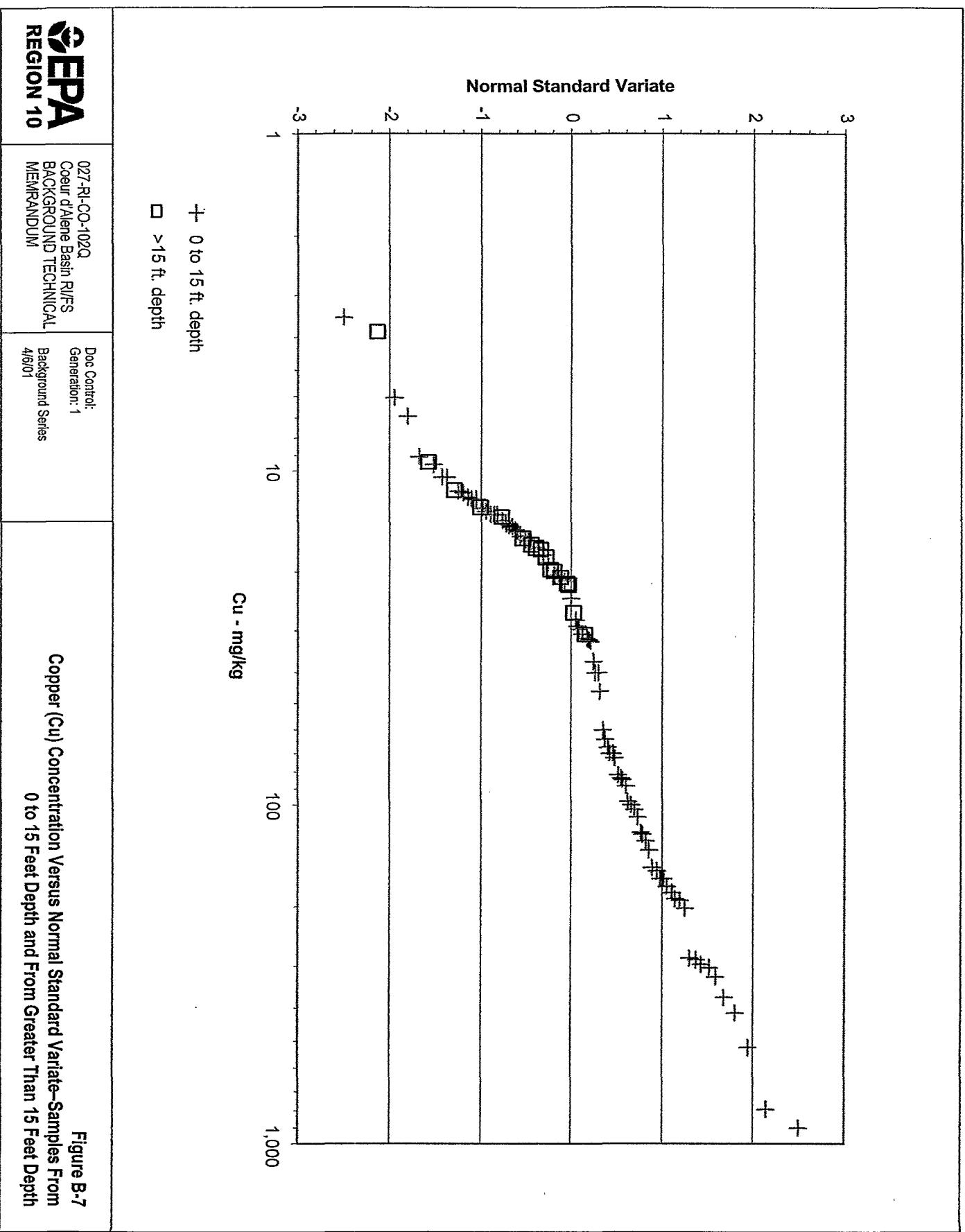


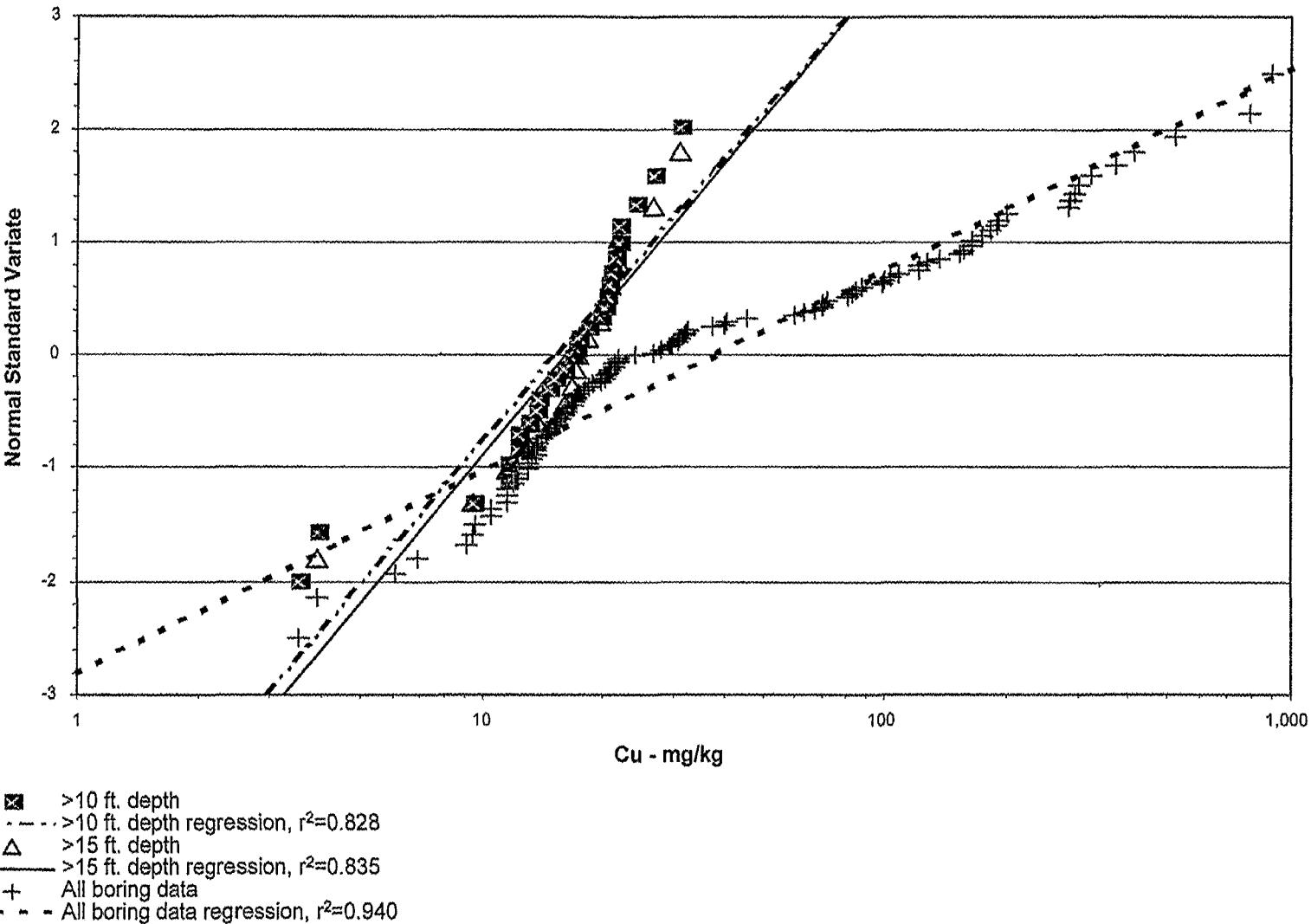
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Figure B-5
Cadmium (Cd) Concentration Versus Normal Standard Variate—Samples From 0 to 10 Feet Depth and From Greater Than 10 Feet Depth





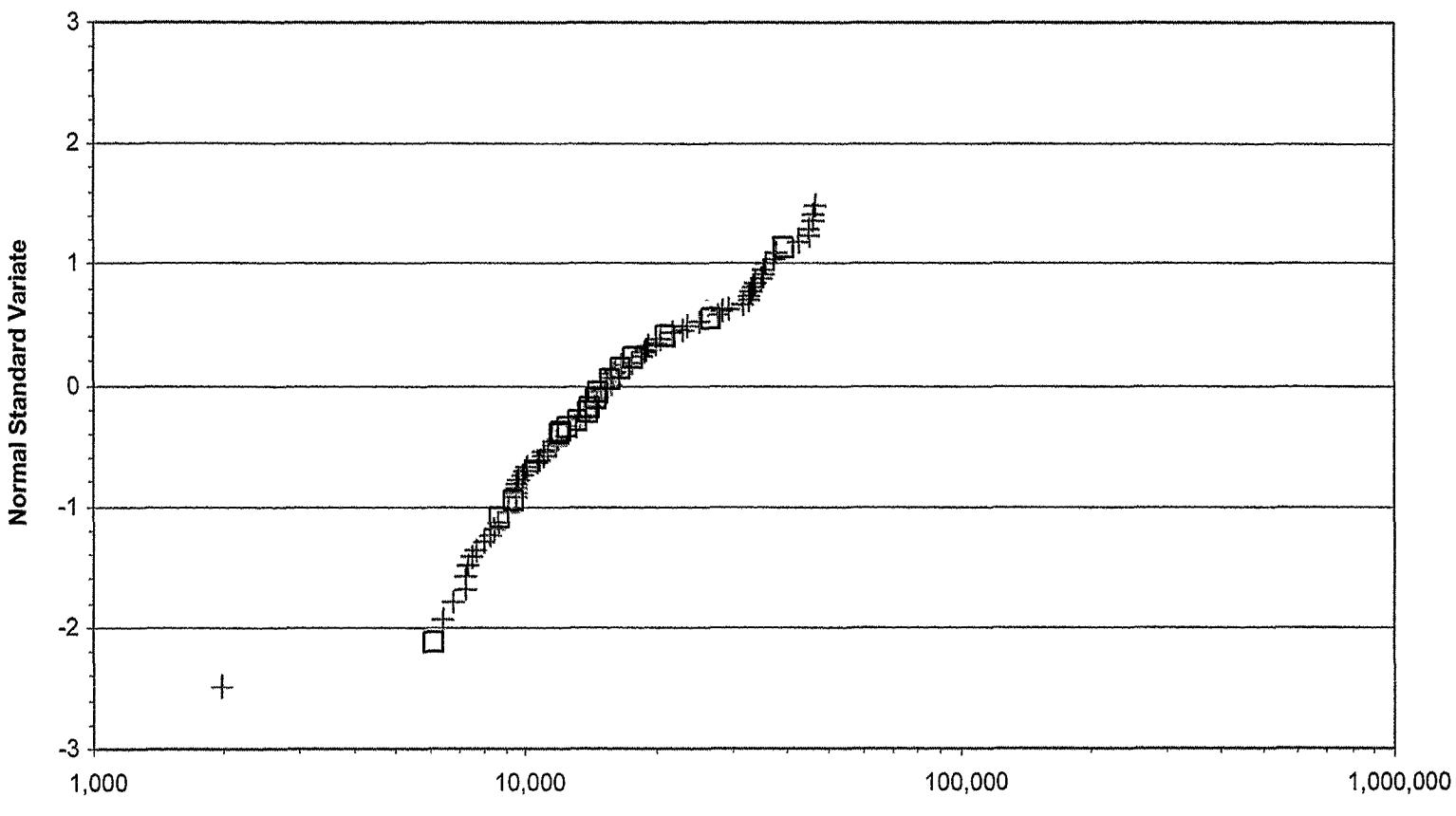


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Figure B-8
Copper (Cu) Concentration Versus Normal Standard Variate—Multiple Depth Profiles
for Sediment Samples in Upper Basin



+ 0 to 15 ft. depth

□ >15 ft. depth



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Figure B-9
Iron (Fe) Concentration Versus Normal Standard Variate—Samples From 0 to 15 Feet Depth and From Greater Than 15 Feet Depth

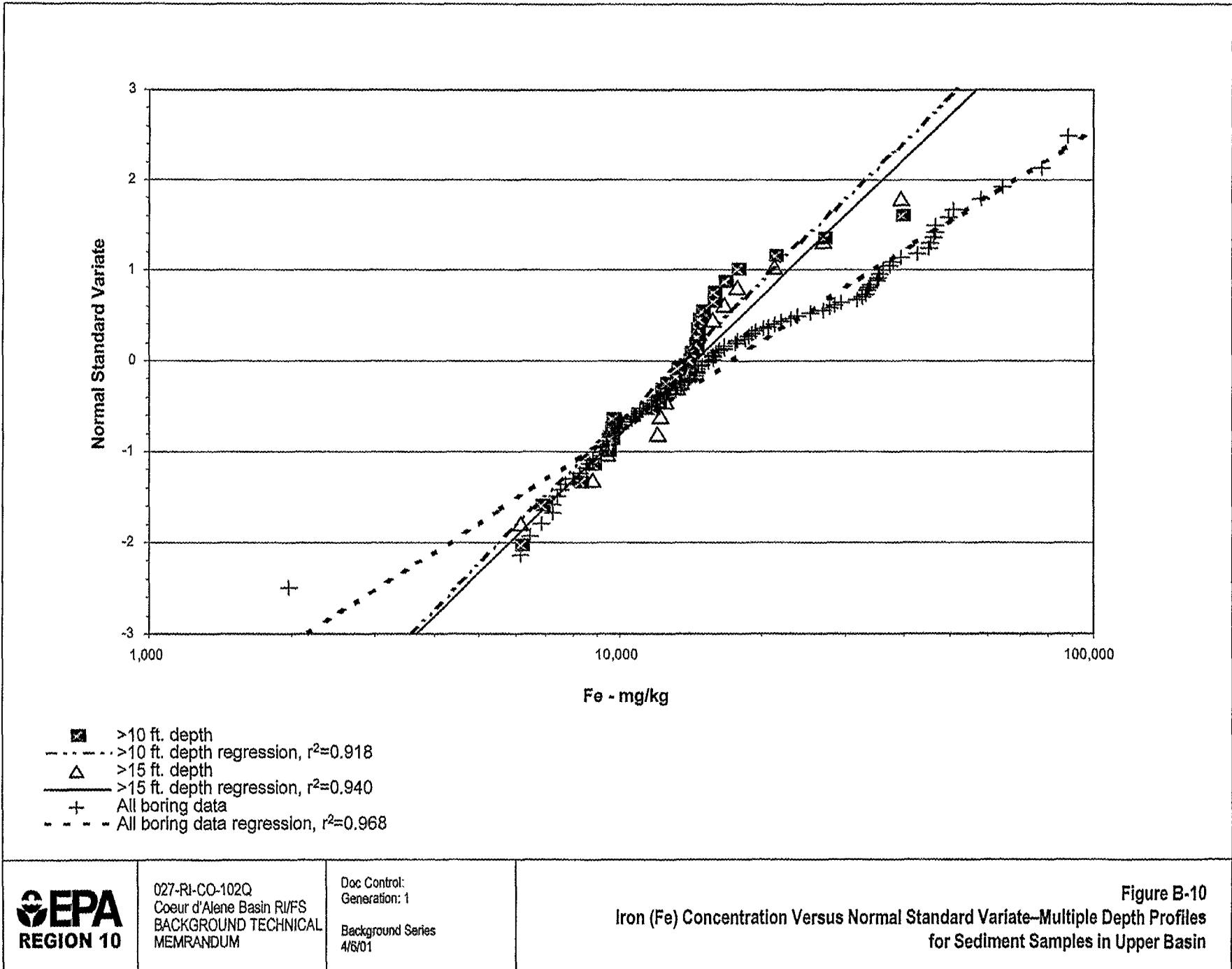
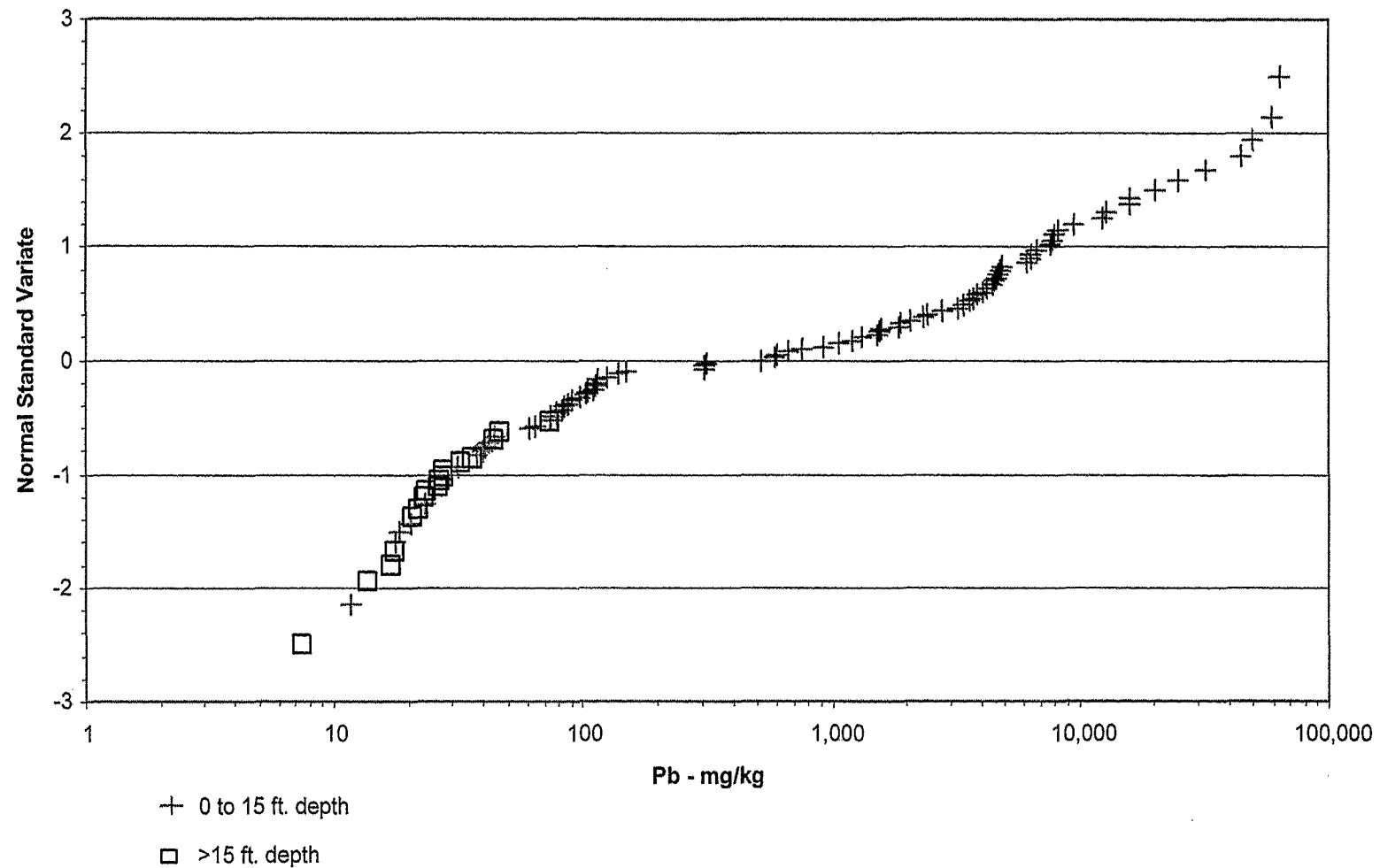


Figure B-10
Iron (Fe) Concentration Versus Normal Standard Variate—Multiple Depth Profiles
for Sediment Samples in Upper Basin

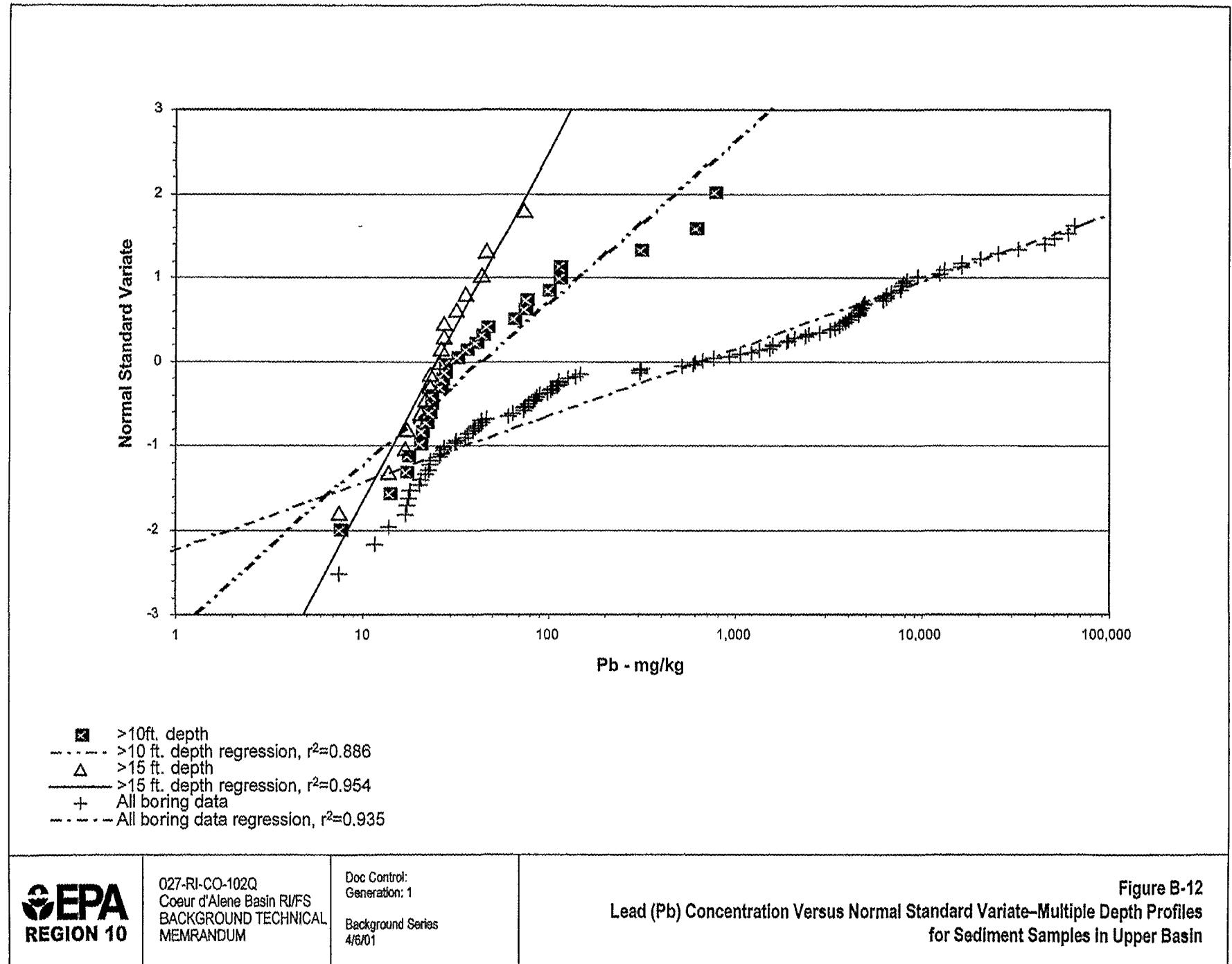


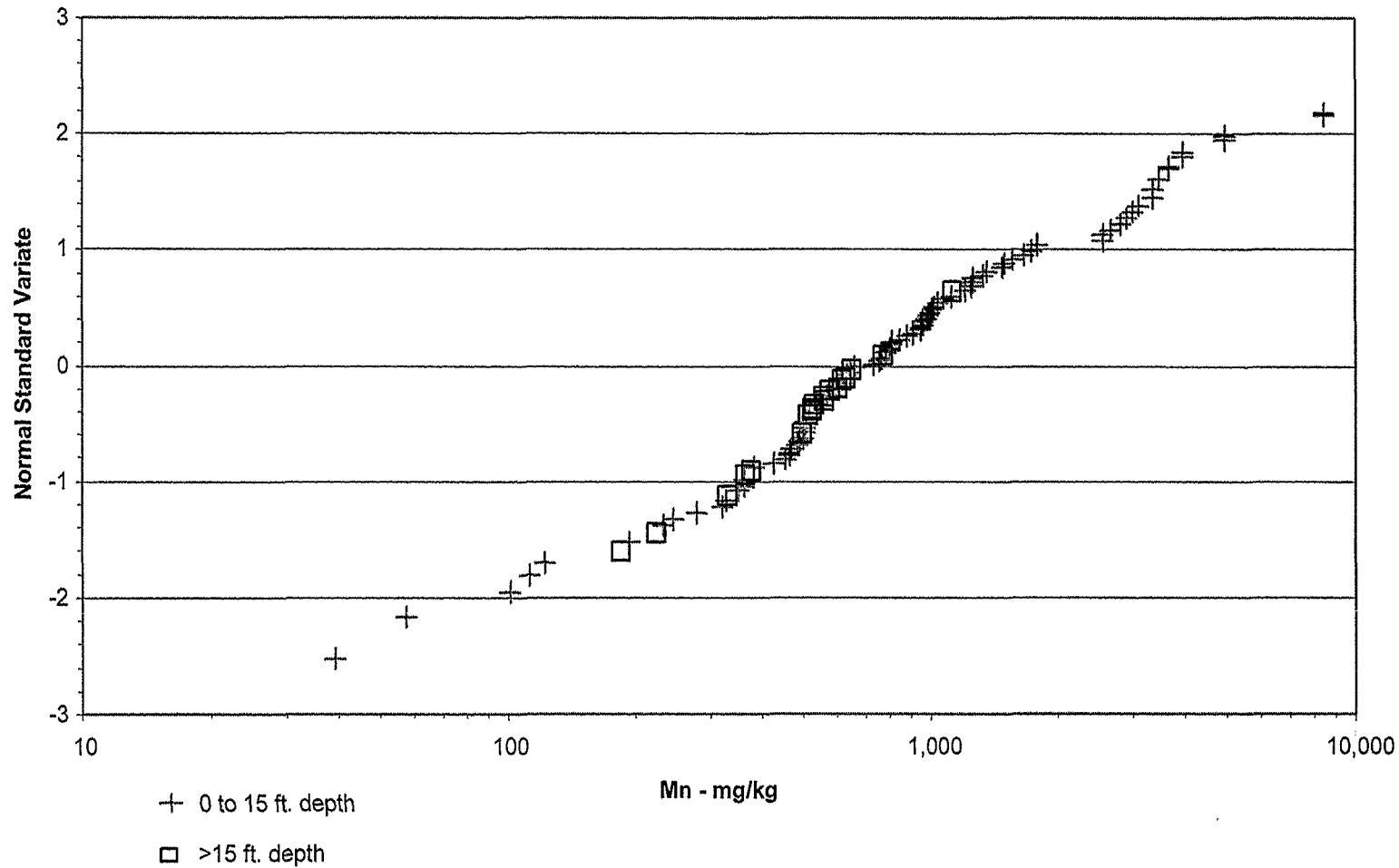
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Figure B-11
Lead (Pb) Concentration Versus Normal Standard Variate—Samples From 0 to 15 Feet Depth and From Greater Than 15 Feet Depth



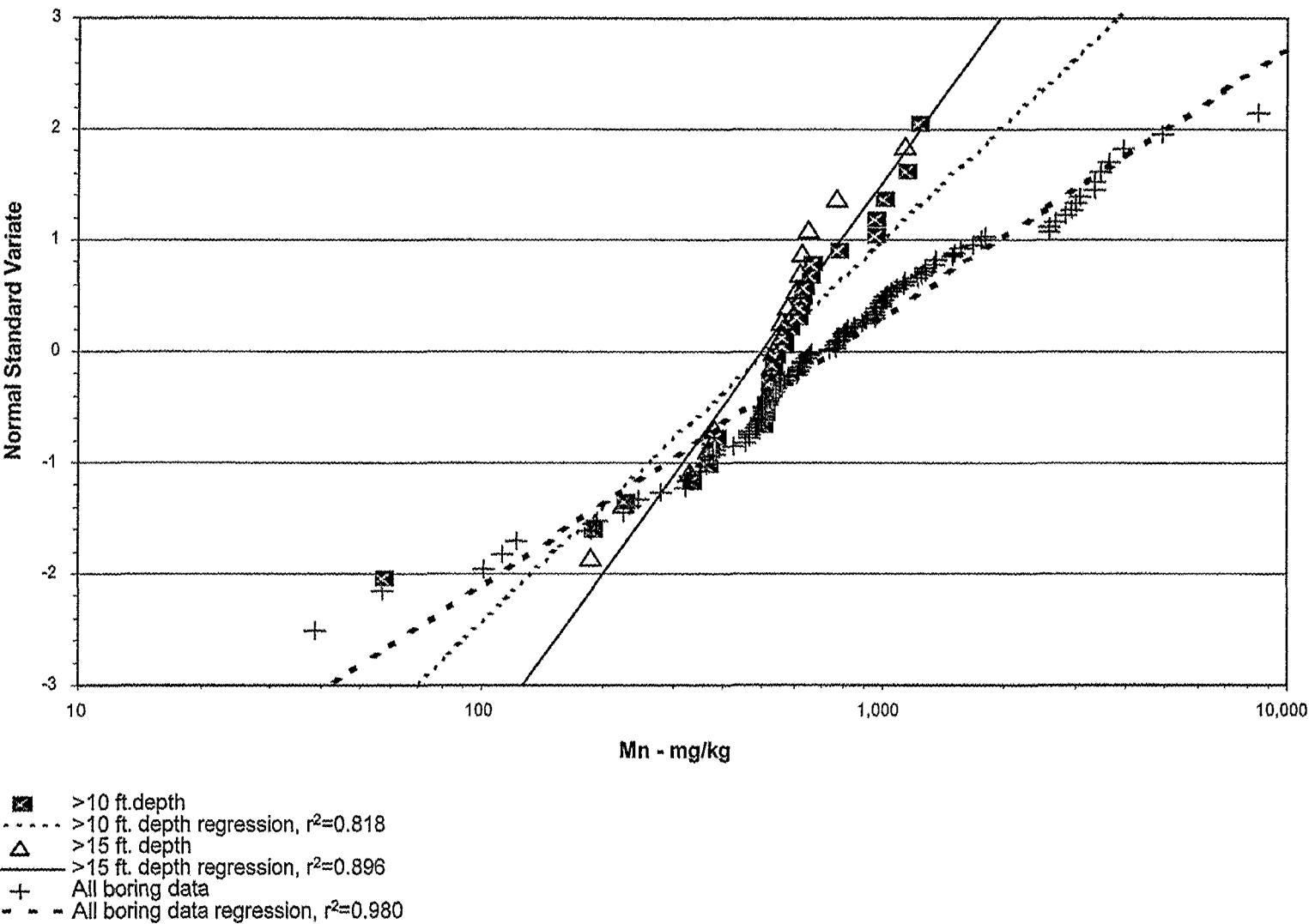


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Figure B-13
Manganese (Mn) Concentration Versus Normal Standard Variate—Samples From 0 to 15 Feet Depth and From Greater Than 15 Feet Depth

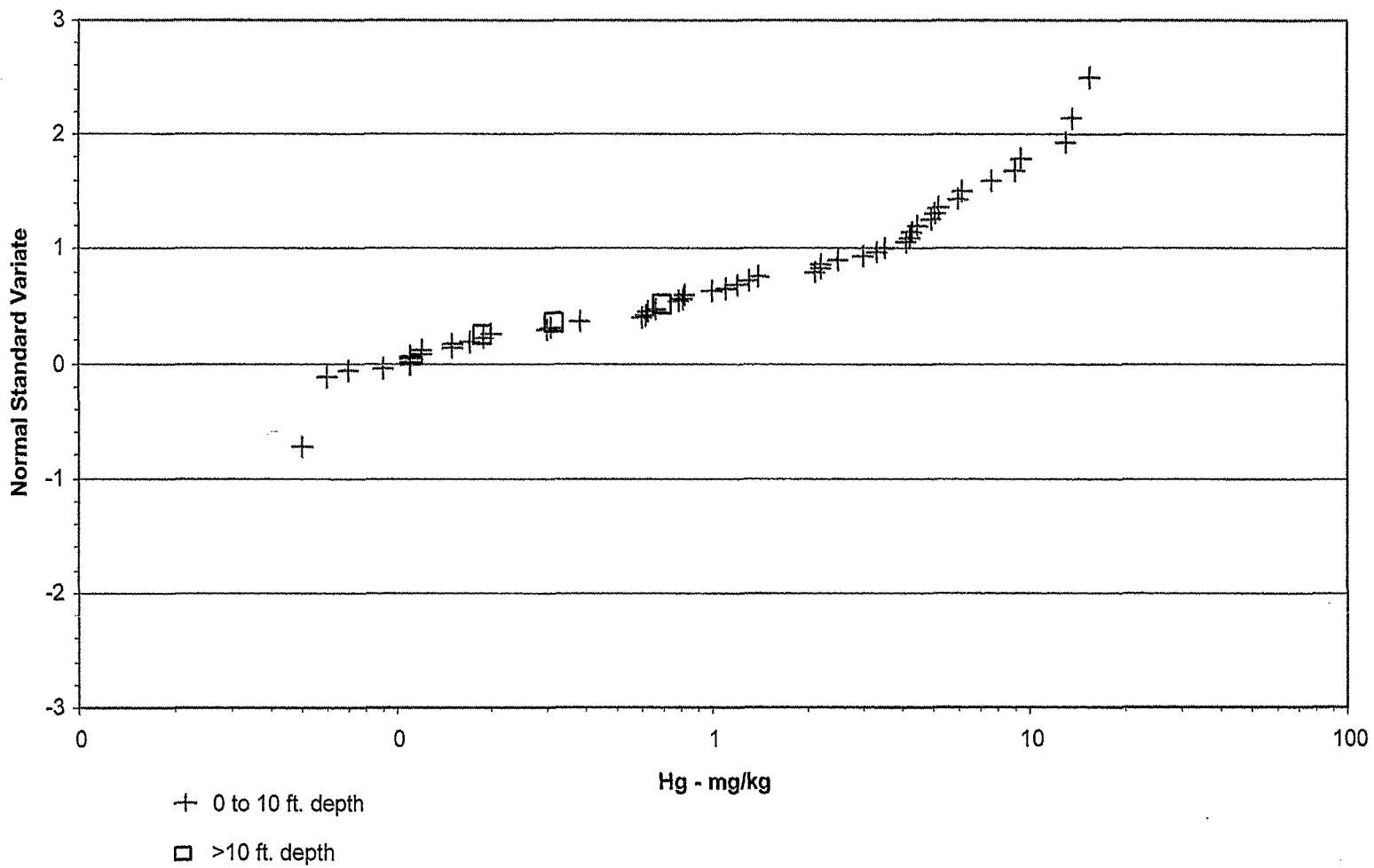


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Figure B-14
Manganese (Mn) Concentration Versus Normal Standard Variate—Multiple Depth Profiles
for Sediment Samples in Upper Basin

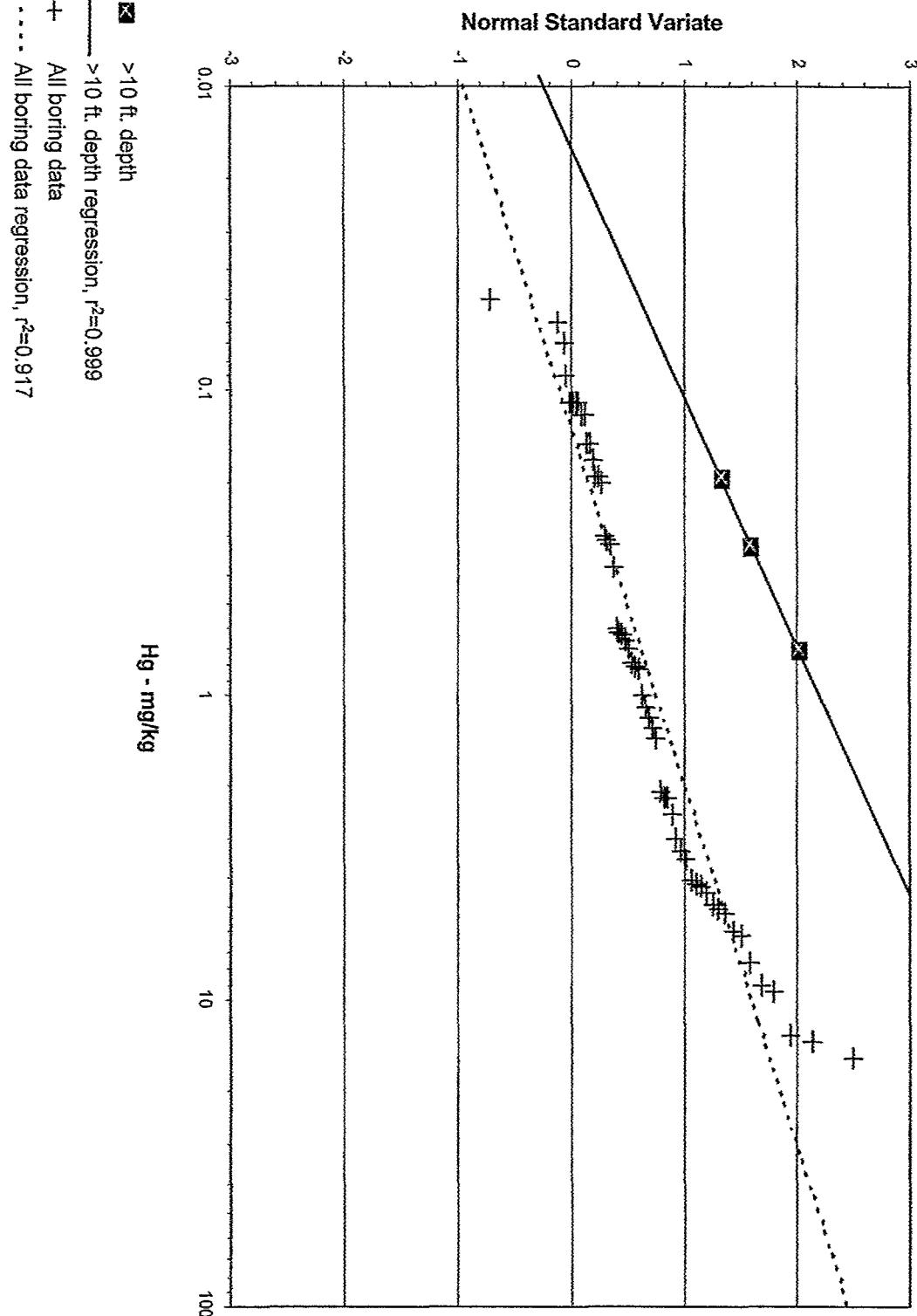


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Figure B-15
Mercury (Hg) Concentration Versus Normal Standard Variate—Samples From 0 to 10 Feet Depth and From Greater Than 10 Feet Depth



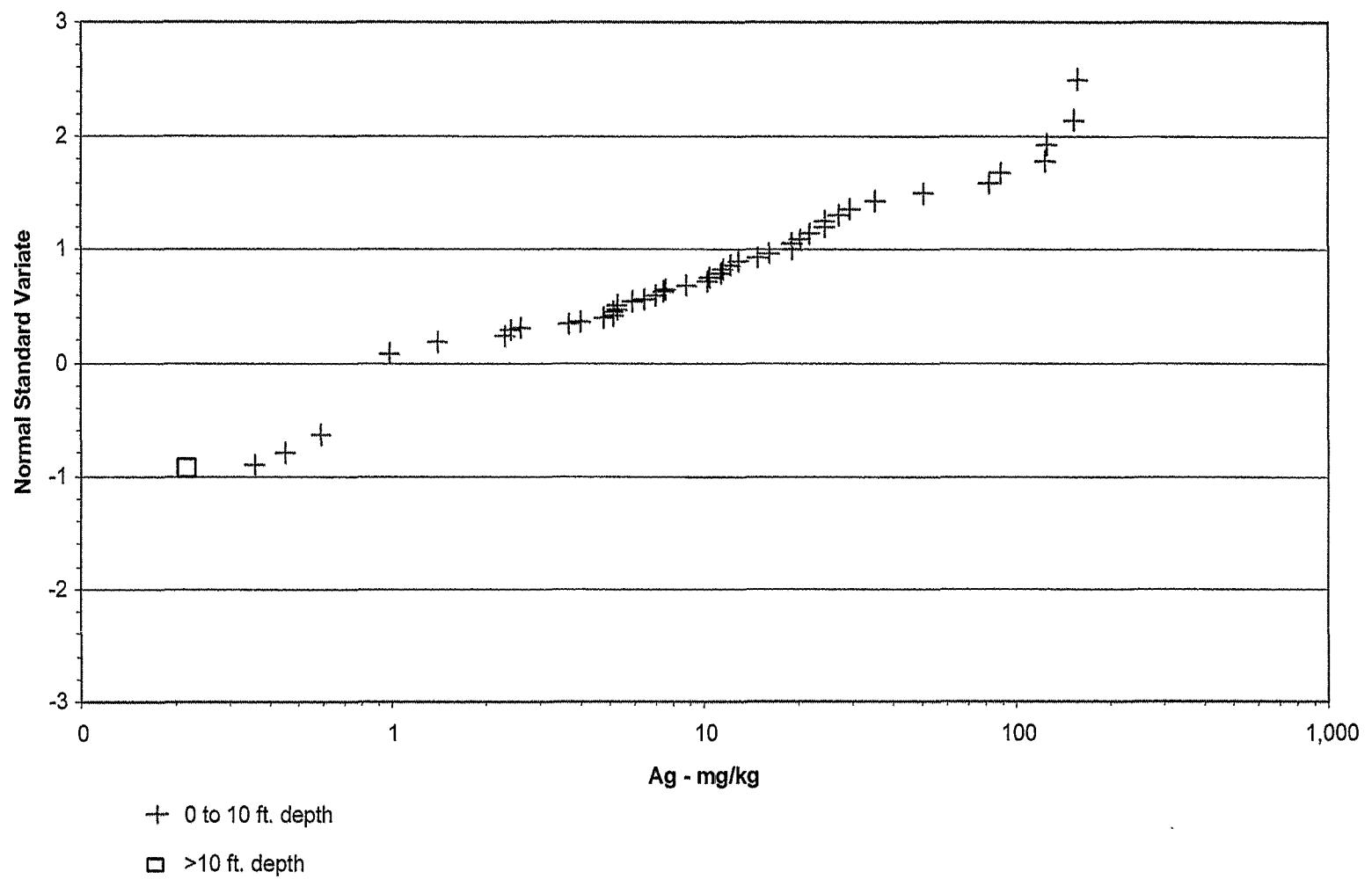
EPA
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Mercury (Hg) Concentration Versus Normal Standard Variate—Multiple Depth Profiles
for Sediment Samples in Upper Basin

Figure B-16

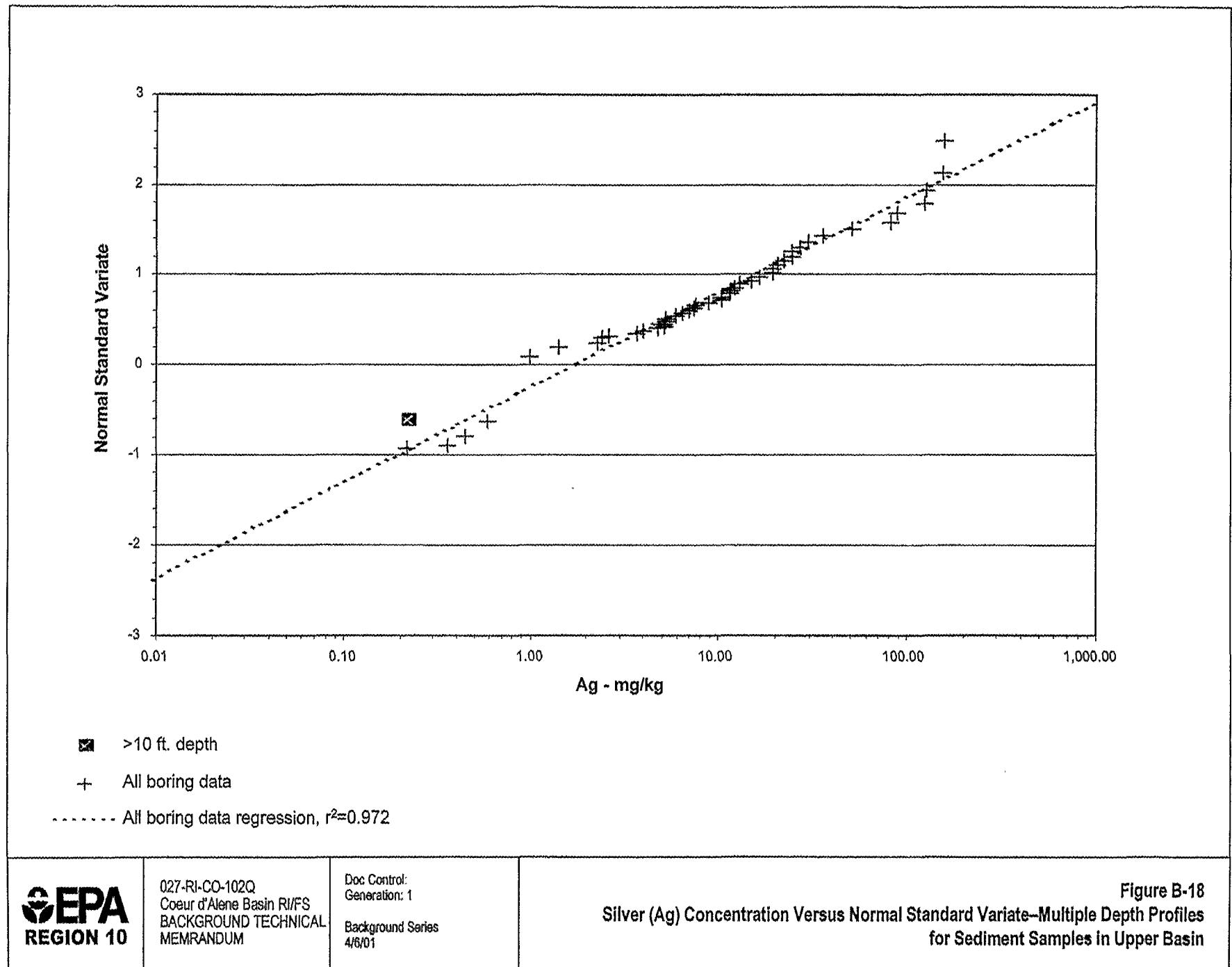


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Silver (Ag) Concentration Versus Normal Standard Variate—Samples From 0 to 10 Feet Depth and From Greater Than 10 Feet Depth



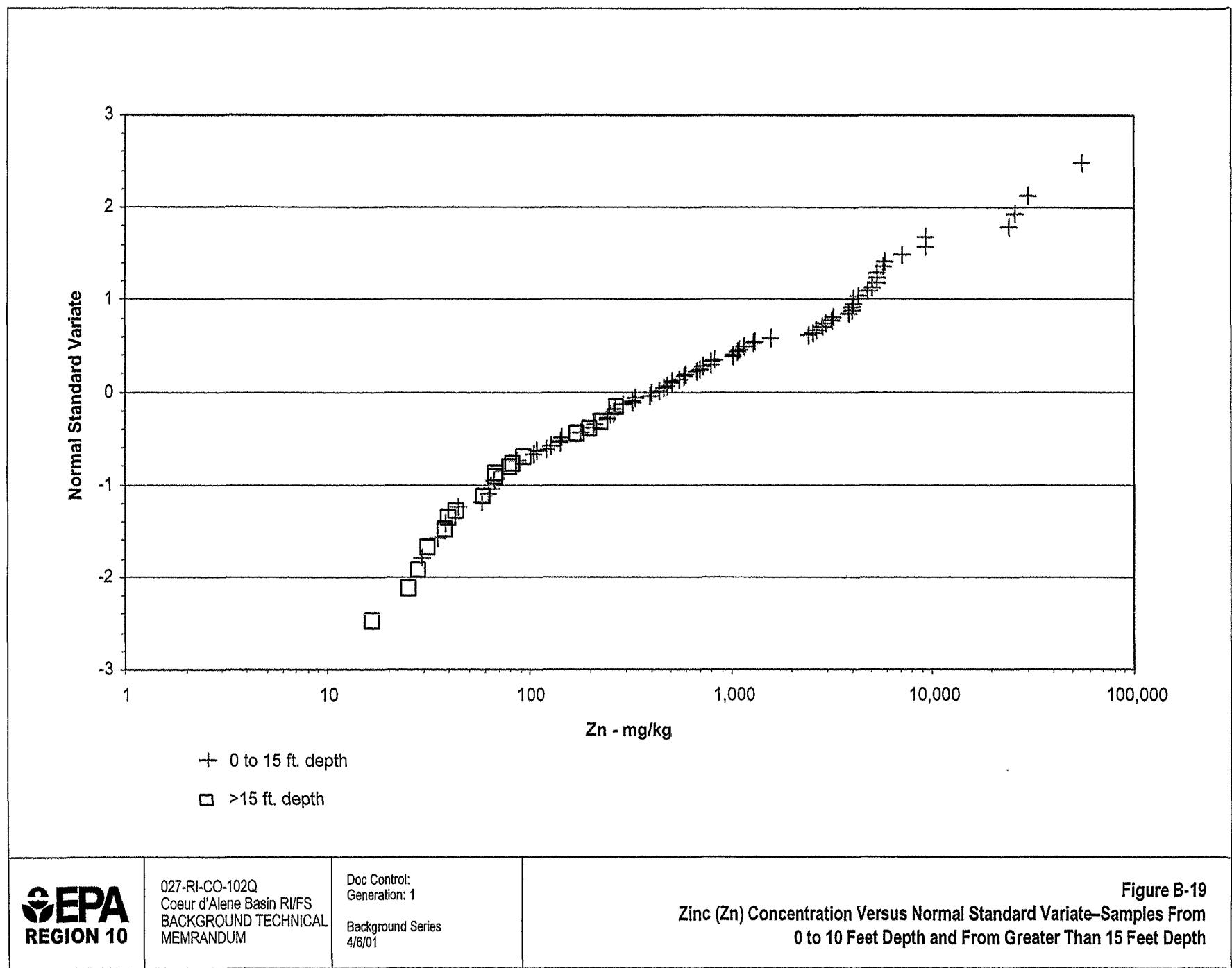


Figure B-19

Zinc (Zn) Concentration Versus Normal Standard Variate—Samples From 0 to 10 Feet Depth and From Greater Than 15 Feet Depth



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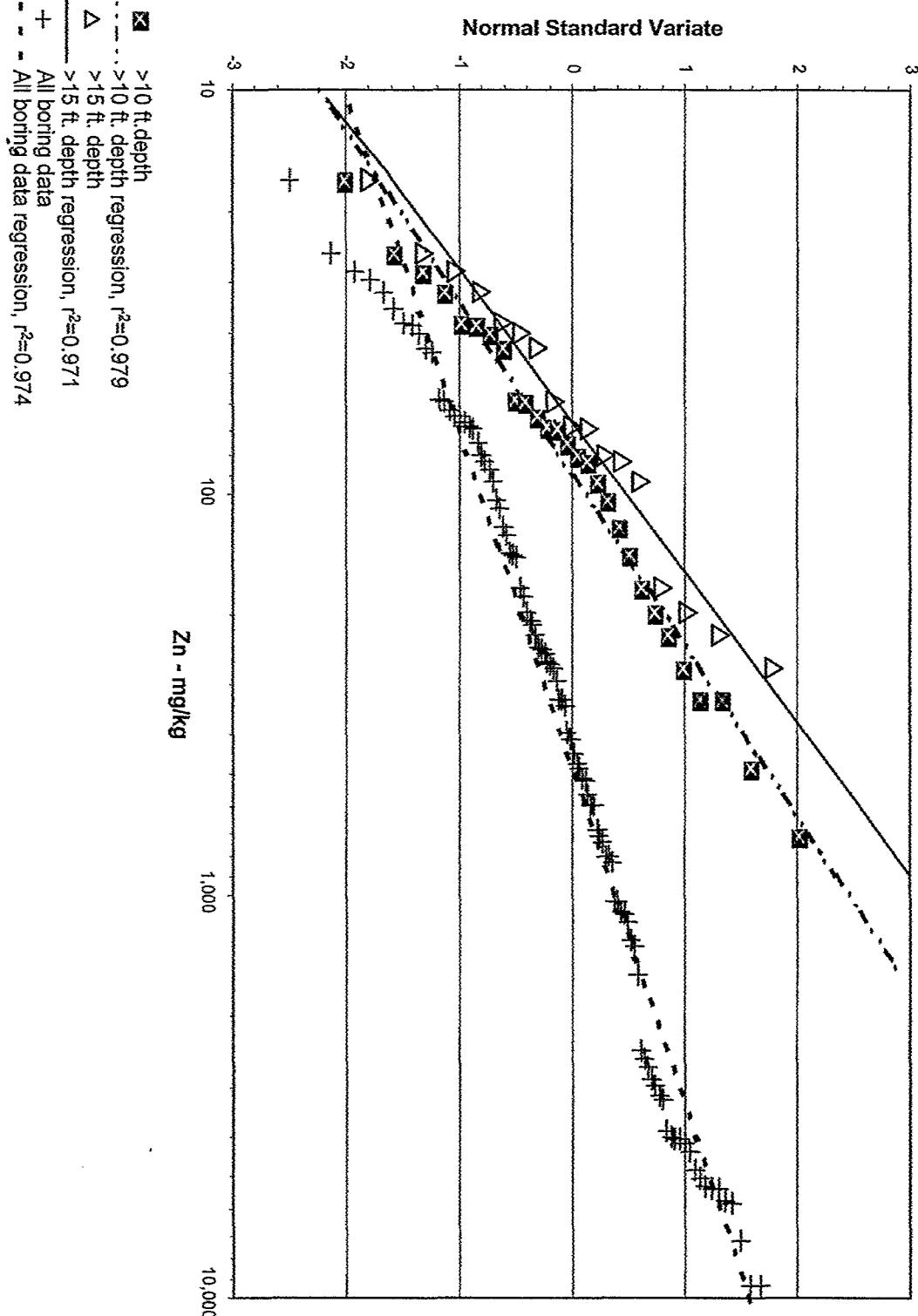
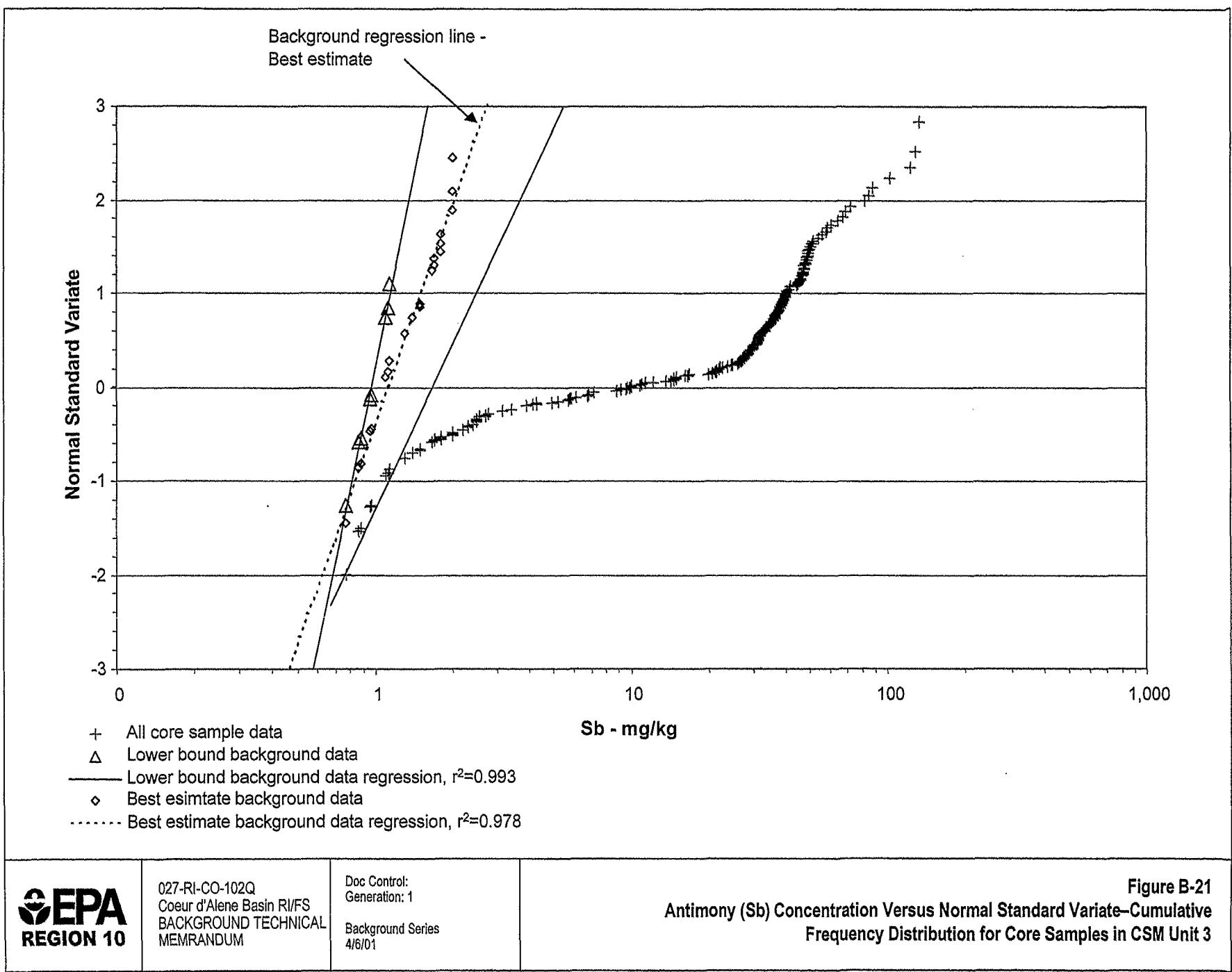


Figure B-20
Zinc (Zn) Concentration Versus Normal Standard Variate-Multiple Depth Profiles
for Sediment Samples in Upper Basin

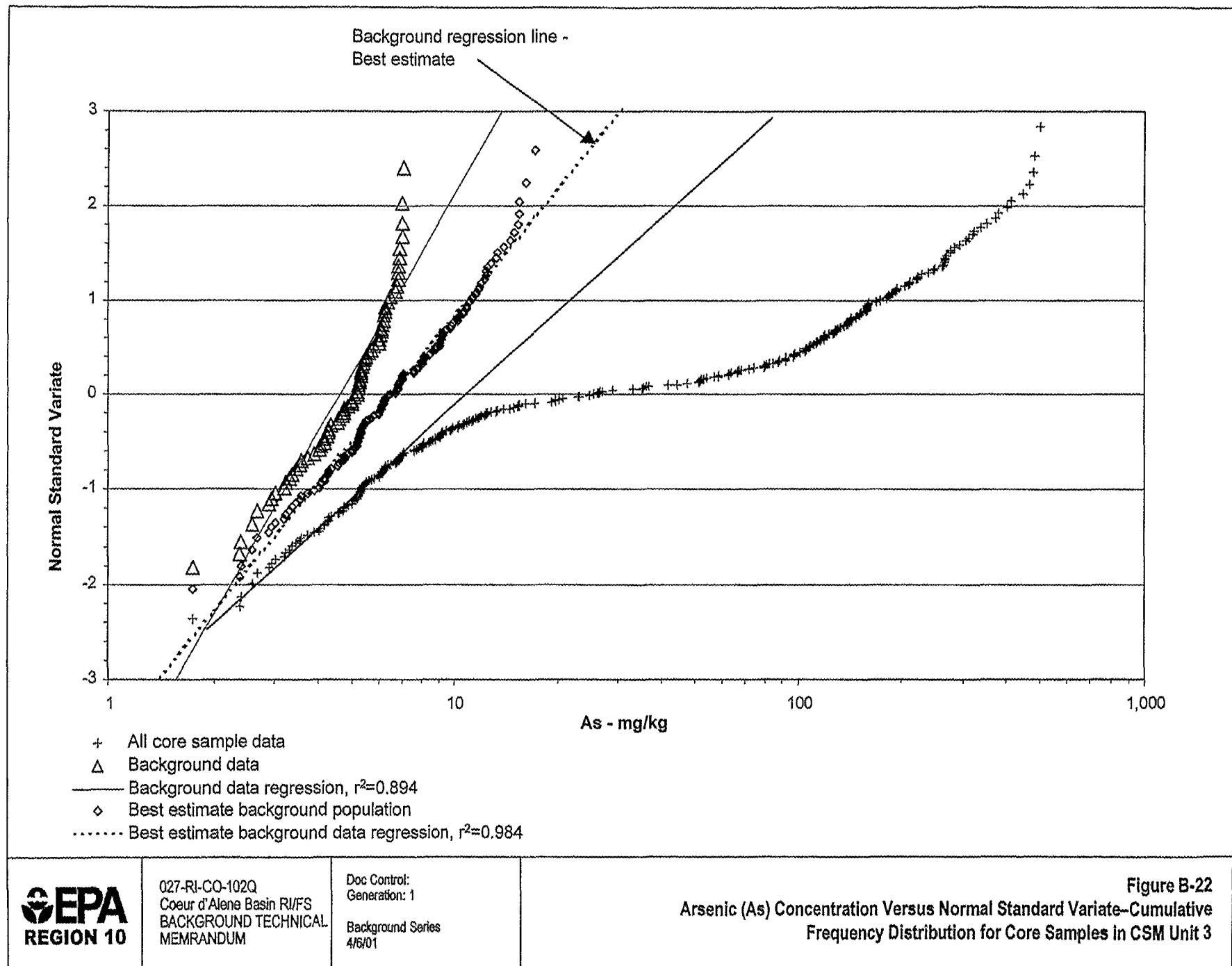
EPA REGION 10	027-R1CC-102Q Coeur d'Alene Basin RUFFS BACKGROUND TECHNICAL MEMORANDUM	Doc Control: Generation: 1 Background Series 4601
	Zinc (Zn) Concentration Versus Normal Standard Variate-Multiple Depth Profiles for Sediment Samples in Upper Basin	

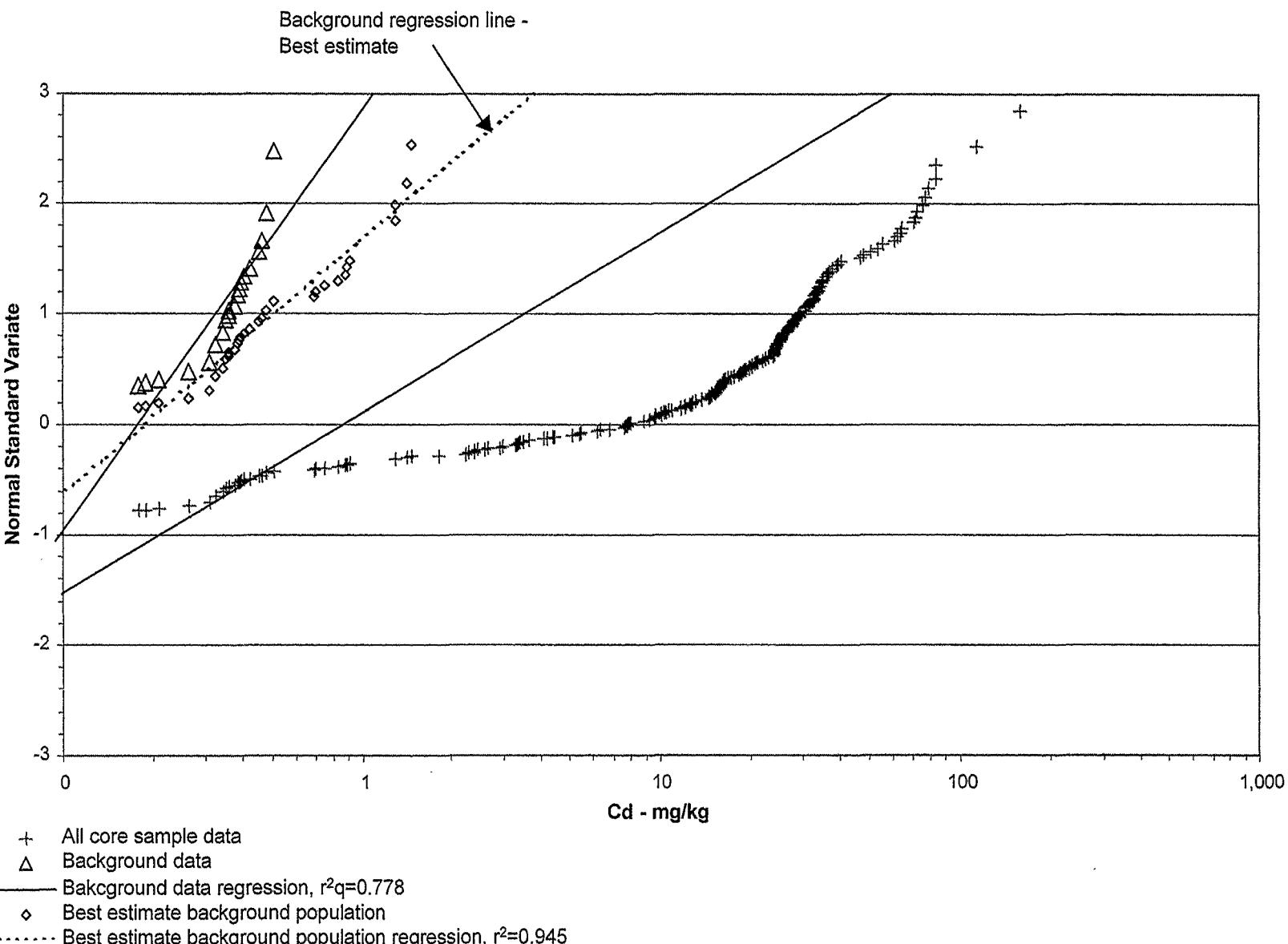


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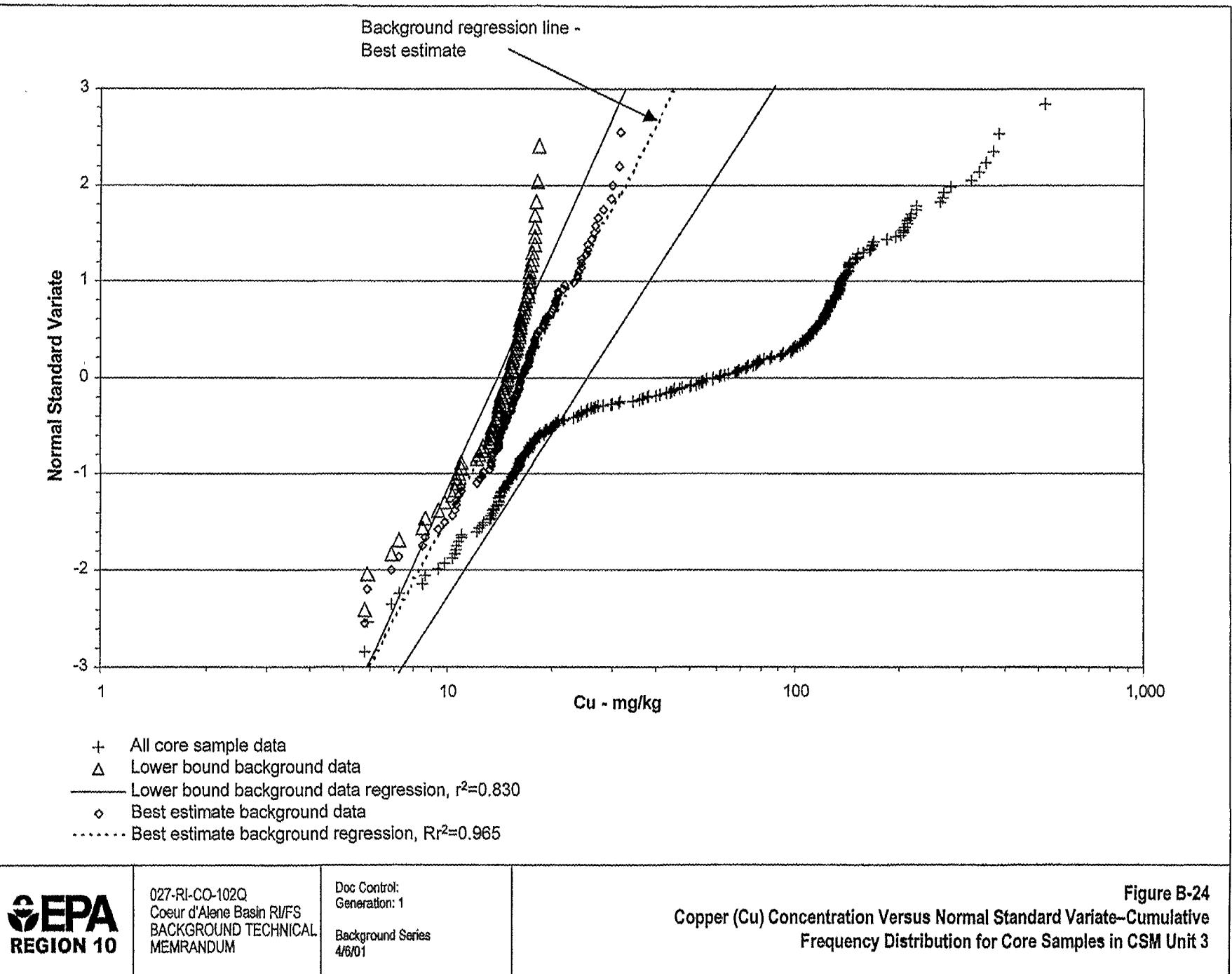


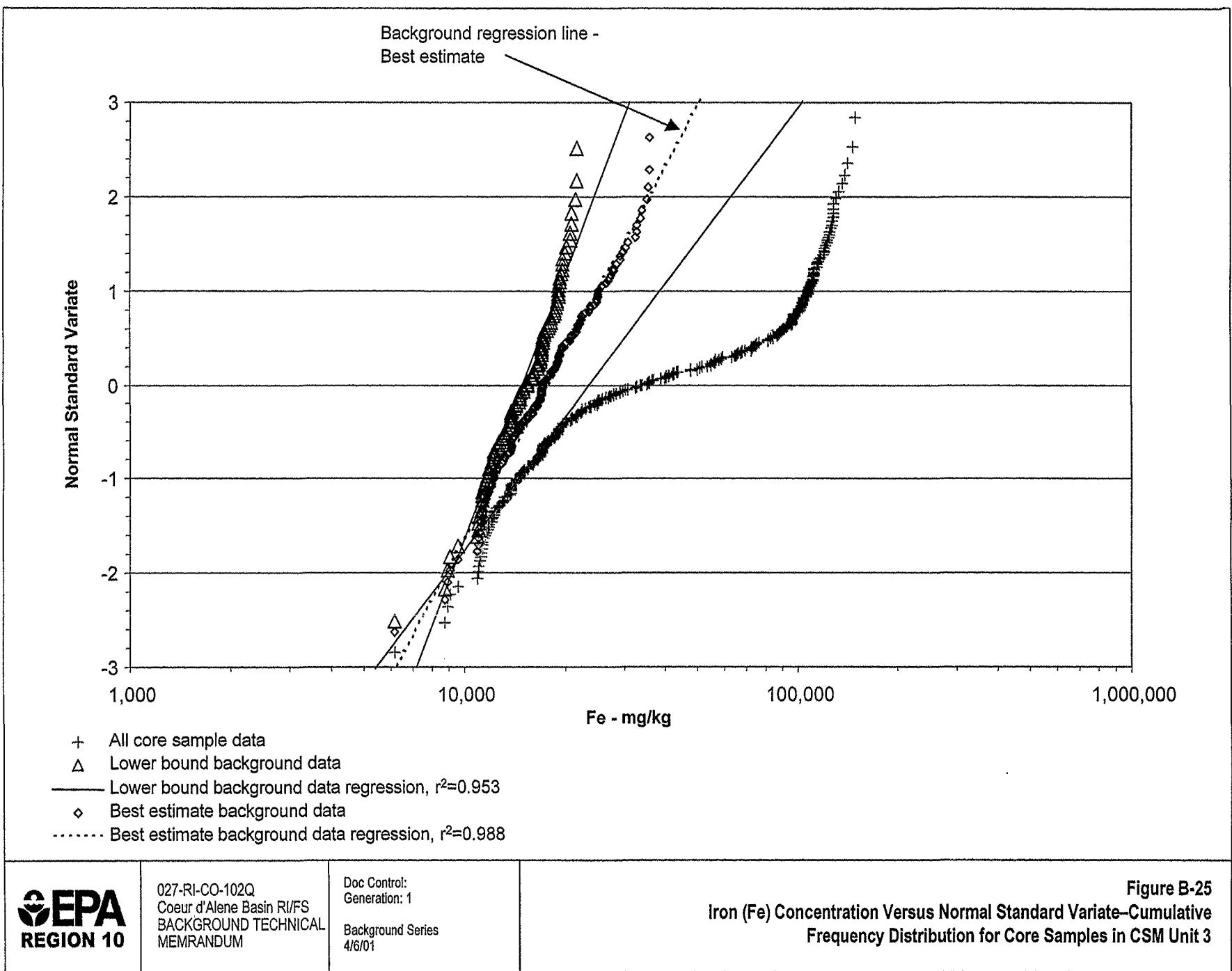
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Figure B-23
Cadmium (Cd) Concentration Versus Normal Standard Variate—Cumulative Frequency Distribution for Core Samples in CSM Unit 3





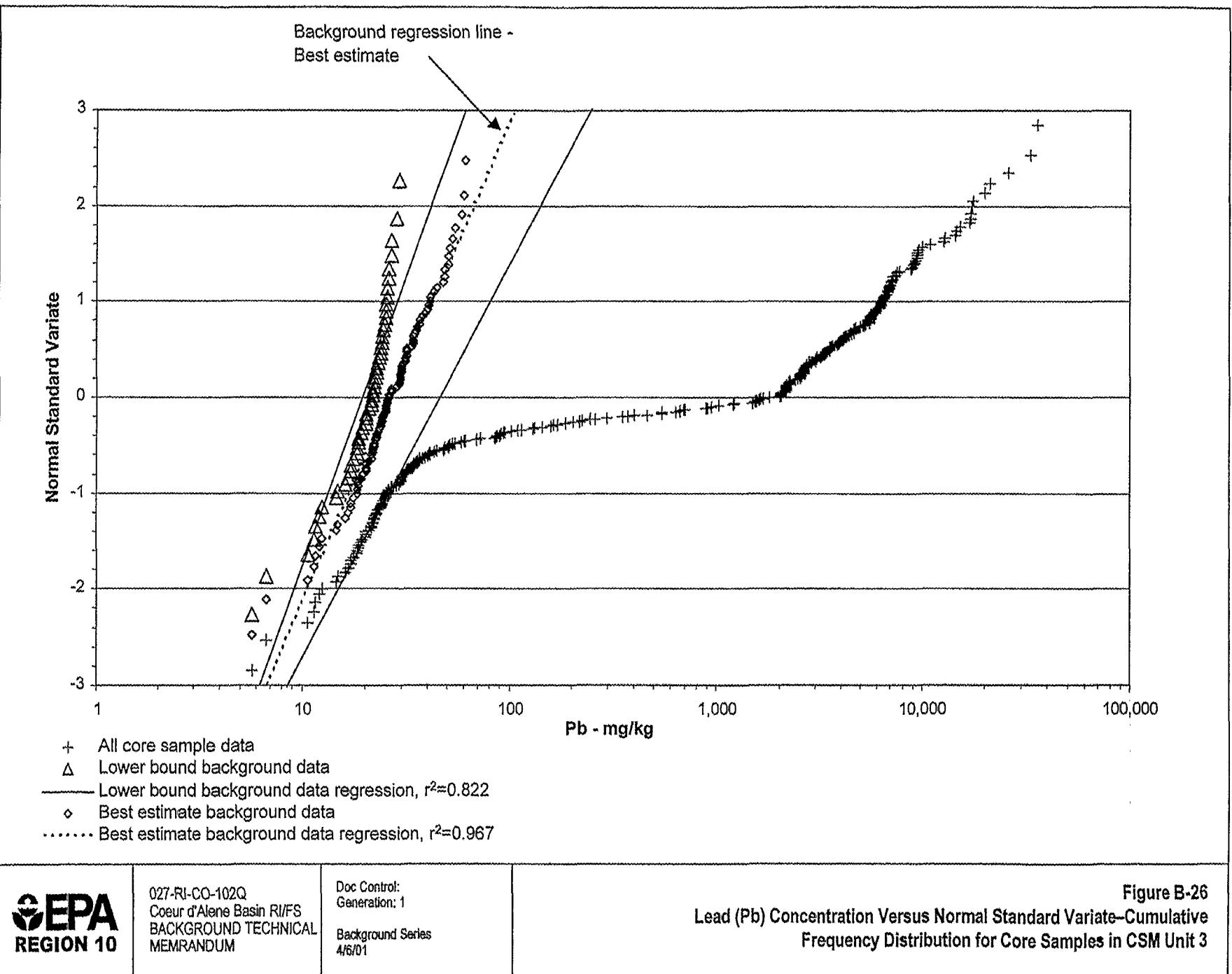
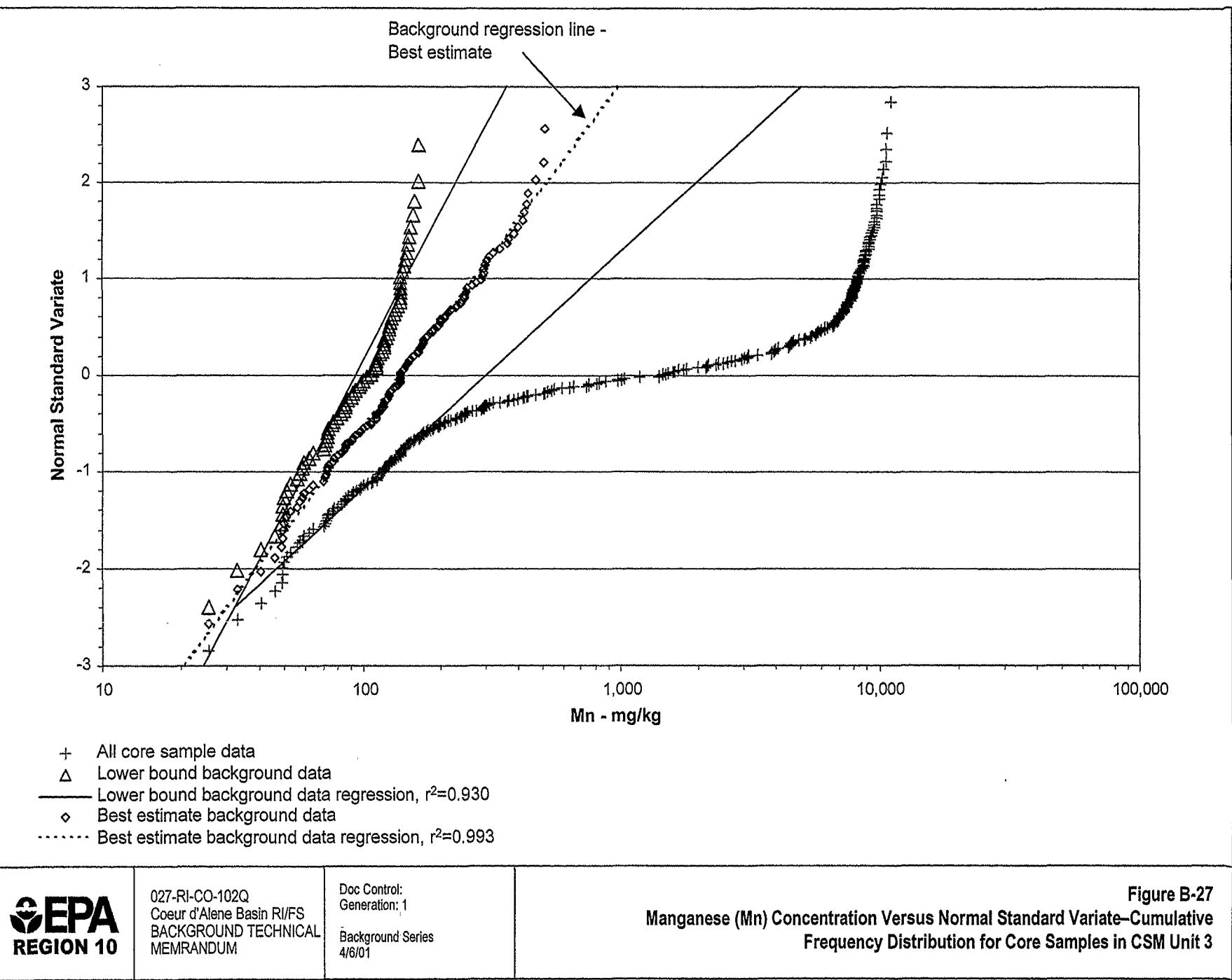
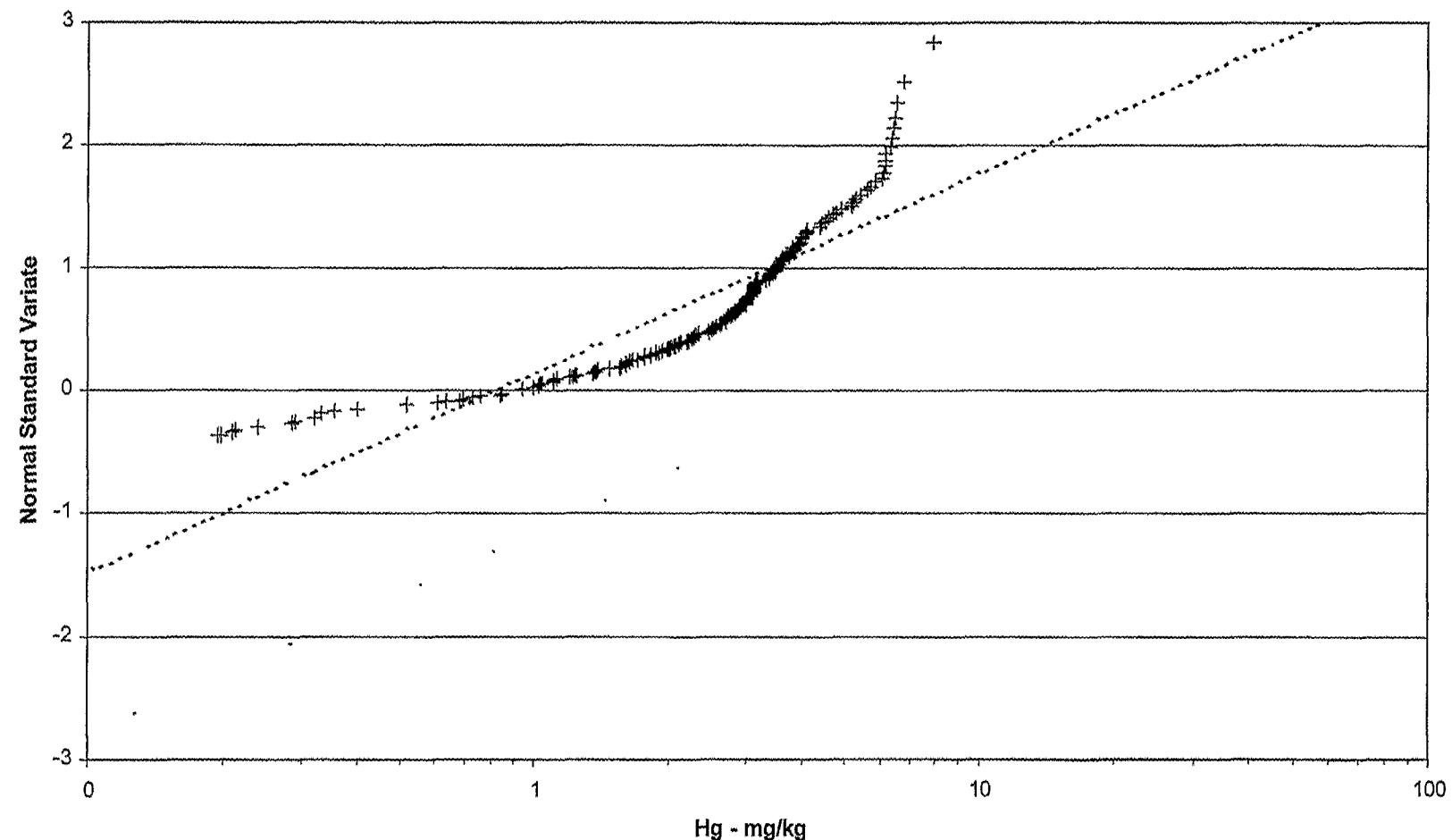


Figure B-26



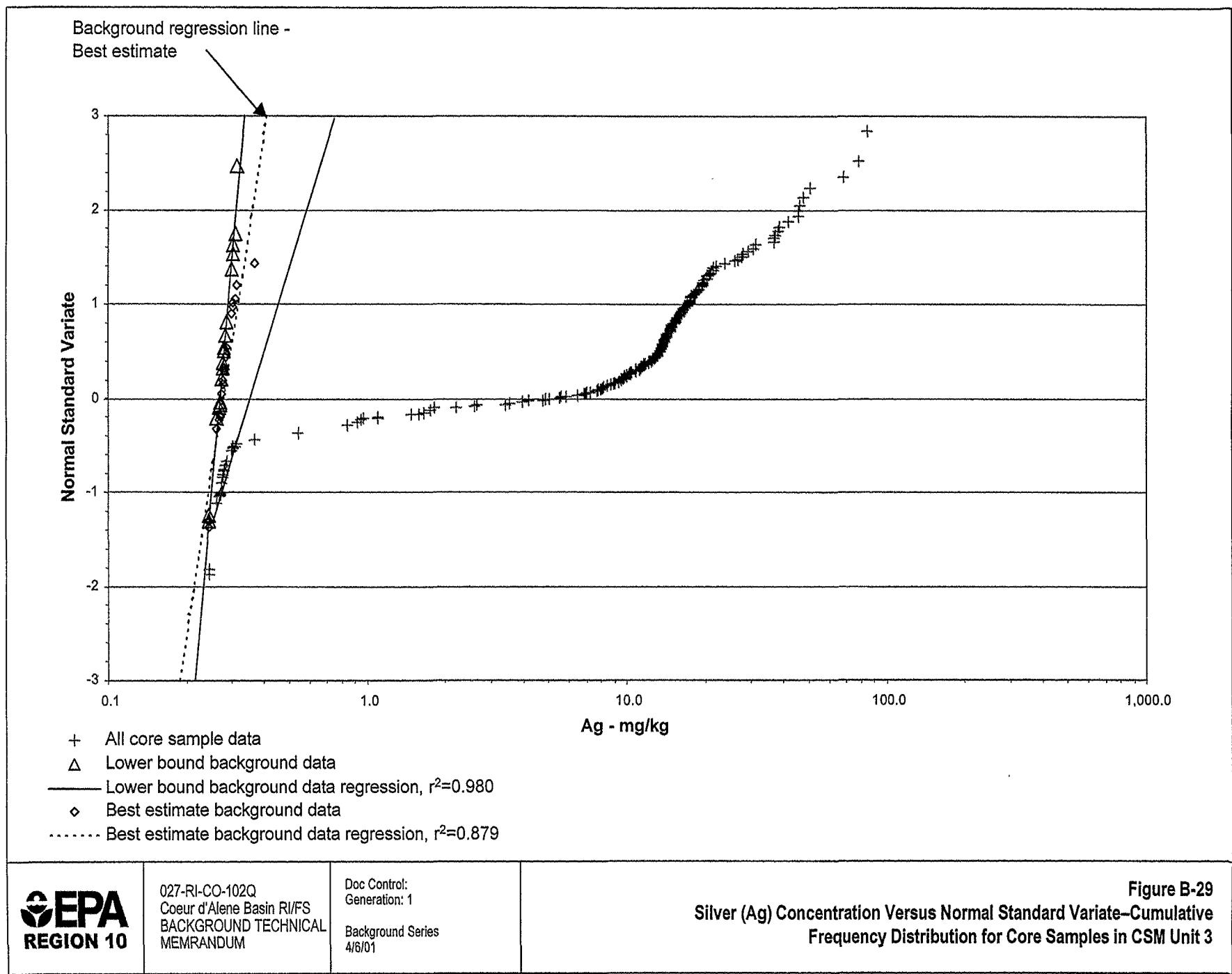


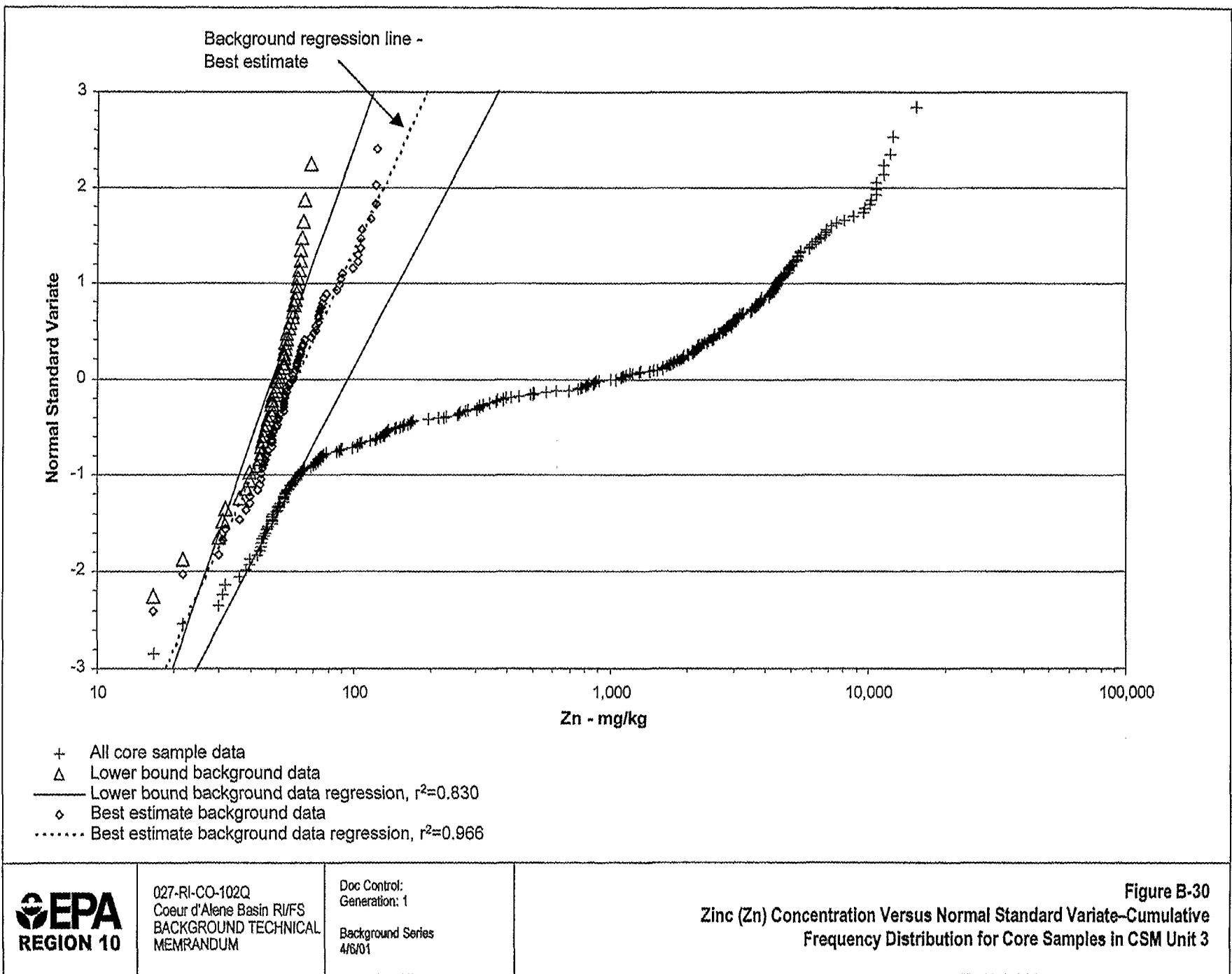
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Figure B-28
Mercury (Hg) Concentration Versus Normal Standard Variate-Cumulative Frequency Distribution for Core Samples in CSM Unit 3





APPENDIX C

Data Tables for Upper Basin Boreholes and Lower Basin Core Samples

Table C-1
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Antimony					
CCSeg02	CC402	5	10/27/1998	48839	38.6
CCSeg02	CC402	10	10/27/1998	48840	1.4 U
CCSeg02	CC402	25	10/27/1998	48841	1.2 U
CCSeg04	CC403	10	10/27/1998	48731	3.6
CCSeg04	CC403	20	10/27/1998	48732	1.3
CCSeg04	CC405	0	11/10/1998	48770	79.3 J
CCSeg04	CC406	0	11/10/1998	48771	12.7 J
CCSeg04	CC407	0	11/10/1998	48772	25.3 J
CCSeg04	CC408	0	11/10/1998	48773	242 J
CCSeg04	CC409	15	10/27/1998	48746	1 U
CCSeg04	CC414	15	10/28/1998	48892	11.7 UJ
CCSeg04	CC414	20	10/28/1998	48893	11.3 UJ
CCSeg04	CC415	5	10/27/1998	48835	14.4
CCSeg04	CC415	10	10/27/1998	48836	239
CCSeg04	CC415	15	10/27/1998	48837	6.6
CCSeg04	CC417	10	10/28/1998	48833	3.8
CCSeg04	CC418	10	10/28/1998	48894	11.2 UJ
CCSeg04	CC419	5	10/28/1998	48832	764
CCSeg04	CC419	25	10/28/1998	48834	1.3 U
CCSeg04	CC422	10	10/29/1998	48895	19.6
CCSeg04	CC422	15	10/29/1998	48896	2.8
CCSeg04	CC426	0	10/25/1998	48826	1.7 J
CCSeg04	CC427	0	10/25/1998	48827	2.2 J
CCSeg04	CC428	0	10/25/1998	48828	1.7 J
CCSeg04	CC429	0	10/25/1998	48829	51.6 J
CCSeg04	CC430	0	10/25/1998	48830	10.6 J
CCSeg04	CC431	5	10/24/1998	48818	10.1 UJ
CCSeg04	CC431	45	10/24/1998	48819	12.4 UJ
CCSeg04	CC431	80	10/24/1998	48820	10.9 UJ
CCSeg04	CC432	15	10/26/1998	48842	9.9 UJ
CCSeg04	CC432	20	10/26/1998	48843	10.4 UJ

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Antimony (Continued)					
CCSeg04	CC433	5	11/6/1998	48790	10.1 UJ
CCSeg04	CC434	5	11/5/1998	48787	10.5 UJ
CCSeg04	CC434	10	11/5/1998	48788	11.3 UJ
CCSeg04	CC440	10	10/26/1998	48838	11.4 UJ
CCSeg04	CC441	20	11/6/1998	48752	11.2 UJ
CCSeg04	CC446	0	11/10/1998	48765	36.1 J
CCSeg04	CC449	6	11/6/1998	48753	11.3 UJ
CCSeg04	CC449	20	11/6/1998	48754	10.5 UJ
CCSeg04	CC451	10	10/29/1998	48897	1.4
CCSeg05	CC452	15	10/29/1998	48844	1.1 U
CCSeg05	CC452	35	10/29/1998	48845	1.4 U
CCSeg05	CC453	5	11/5/1998	48737	29 J
CCSeg05	CC456	5	11/5/1998	48735	10.4 UJ
CCSeg05	CC456	15	11/5/1998	48736	10.1 UJ
CCSeg05	CC460	20	11/18/1998	48762	0.6 J
CCSeg05	CC462	5	11/13/1998	49056	0.64 UJ
CCSeg05	CC463	10	11/7/1998	49048	20 J
CCSeg05	CC464	5	11/11/1998	49052	30.2 J
CCSeg05	CC465	5	11/10/1998	49051	0.86 J
CCSeg05	CC465	10	11/10/1998	49050	0.84 J
CCSeg05	CC467	6	11/9/1998	48758	10.7 UJ
CCSeg05	CC470	0	11/10/1998	48793	13.9 J
CCSeg05	CC472	0	11/10/1998	48795	70.3 J
CCSeg05	CC473	0	11/10/1998	48796	24.1 J
CCSeg05	CC474	0	11/10/1998	48797	9.8 J
CCSeg05	CC475	0	11/10/1998	48798	16.8 J
CCSeg05	CC477	0	11/10/1998	48800	34.7 J
CCSeg05	CC480	5	11/4/1998	48734	14.2 UJ
CCSeg05	CC481	5	11/17/1998	49351	14.1 J
CCSeg05	CC481	12	11/17/1998	49352	0.99 J
NmSeg02	NM413	0	10/25/1998	48821	3.2 J
NmSeg02	NM414	0	10/25/1998	48822	2.3 J

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Antimony (Continued)					
NmSeg02	NM415	0	10/25/1998	48823	1.8 J
NmSeg02	NM416	0	10/25/1998	48824	2.6 J
NmSeg02	NM417	0	10/25/1998	48825	3.7 J
NmSeg02	NM429	0	11/10/1998	48780	0.42 UJ
NmSeg02	NM430	0	11/10/1998	48781	2.8 J
NmSeg02	NM431	0	11/10/1998	48782	9.3 J
NmSeg02	NM432	0	11/10/1998	48783	6.6 J
NmSeg02	NM433	0	11/10/1998	48784	4.2 J
NmSeg02	NM461	0	11/10/1998	48858	10.5 J
NmSeg02	NM462	0	11/10/1998	48859	3.1 J
NmSeg04	NM441	15	11/5/1998	48786	11.3 UJ
NmSeg04	NM442	5	11/4/1998	48850	26.6 J
NmSeg04	NM442	15	11/4/1998	48851	11.1 UJ
NmSeg04	NM453	0	11/10/1998	48785	8.6 J
NmSeg04	NM454	0	11/10/1998	48854	13.3 J
NmSeg04	NM455	0	11/10/1998	48855	17.5 J
NmSeg04	NM456	0	11/10/1998	48856	5.1 J
NmSeg04	NM457	0	11/10/1998	48857	2.8 J
NmSeg04	NM459	10	11/12/1998	49058	0.62 UJ
NmSeg04	NM459	25	11/12/1998	49057	0.63 UJ
NmSeg04	NM460	5	11/4/1998	48848	11.2 UJ
NmSeg04	NM460	10	11/4/1998	48849	12.2 UJ
Arsenic					
CCSeg02	CC402	5	10/27/1998	48839	24.5 J
CCSeg02	CC402	10	10/27/1998	48840	32.9 J
CCSeg02	CC402	25	10/27/1998	48841	13.2 J
CCSeg04	CC403	10	10/27/1998	48731	22.8 J
CCSeg04	CC403	20	10/27/1998	48732	20.4 J
CCSeg04	CC405	0	11/10/1998	48770	103
CCSeg04	CC406	0	11/10/1998	48771	141
CCSeg04	CC407	0	11/10/1998	48772	3610
CCSeg04	CC408	0	11/10/1998	48773	84.7

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Arsenic (Continued)					
CCSeg04	CC409	15	10/27/1998	48746	27.1 J
CCSeg04	CC414	15	10/28/1998	48892	11.4
CCSeg04	CC414	20	10/28/1998	48893	11
CCSeg04	CC415	5	10/27/1998	48835	13 J
CCSeg04	CC415	10	10/27/1998	48836	57.4 J
CCSeg04	CC415	15	10/27/1998	48837	6.8 J
CCSeg04	CC417	10	10/28/1998	48833	6.5 J
CCSeg04	CC418	10	10/28/1998	48894	5.4
CCSeg04	CC419	5	10/28/1998	48832	87.2 J
CCSeg04	CC419	25	10/28/1998	48834	2 J
CCSeg04	CC422	10	10/29/1998	48895	6.3 J
CCSeg04	CC422	15	10/29/1998	48896	6.4 J
CCSeg04	CC426	0	10/25/1998	48826	5.8
CCSeg04	CC427	0	10/25/1998	48827	6.8
CCSeg04	CC428	0	10/25/1998	48828	6.9
CCSeg04	CC429	0	10/25/1998	48829	97
CCSeg04	CC430	0	10/25/1998	48830	25.8
CCSeg04	CC431	5	10/24/1998	48818	1.4
CCSeg04	CC431	45	10/24/1998	48819	2
CCSeg04	CC431	80	10/24/1998	48820	2.2
CCSeg04	CC432	15	10/26/1998	48842	0.91
CCSeg04	CC432	20	10/26/1998	48843	2
CCSeg04	CC433	5	11/6/1998	48790	4.3 J
CCSeg04	CC434	5	11/5/1998	48787	4.9 J
CCSeg04	CC434	10	11/5/1998	48788	3.2 J
CCSeg04	CC440	10	10/26/1998	48838	3.1
CCSeg04	CC441	20	11/6/1998	48752	6.8 J
CCSeg04	CC446	0	11/10/1998	48765	24.8
CCSeg04	CC449	6	11/6/1998	48753	8.1 J
CCSeg04	CC449	20	11/6/1998	48754	4.3 J
CCSeg04	CC451	10	10/29/1998	48897	5.8 J
CCSeg04	CC451	25	10/29/1998	48898	4.9 J

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Arsenic (Continued)					
CCSeg05	CC452	15	10/29/1998	48844	3.9 J
CCSeg05	CC452	35	10/29/1998	48845	2.1 J
CCSeg05	CC453	5	11/5/1998	48737	10.7 J
CCSeg05	CC456	5	11/5/1998	48735	21.2 J
CCSeg05	CC456	15	11/5/1998	48736	8.7 J
CCSeg05	CC459	10	11/16/1998	48759	3.7
CCSeg05	CC459	35	11/16/1998	48760	9
CCSeg05	CC460	5	11/18/1998	48761	3.1
CCSeg05	CC460	20	11/18/1998	48762	2.6
CCSeg05	CC462	5	11/13/1998	49056	1.4 J
CCSeg05	CC462	10	11/13/1998	49055	3.3
CCSeg05	CC463	10	11/7/1998	49048	7.7
CCSeg05	CC463	40	11/9/1998	49049	5.8
CCSeg05	CC464	20	11/11/1998	49054	6
CCSeg05	CC464	43	11/11/1998	49053	6.4
CCSeg05	CC465	5	11/10/1998	49051	3.8
CCSeg05	CC465	10	11/10/1998	49050	10.4
CCSeg05	CC467	6	11/9/1998	48758	5.4 J
CCSeg05	CC468	10	11/10/1998	48755	3.1
CCSeg05	CC469	10	11/9/1998	48756	5.4
CCSeg05	CC469	15	11/9/1998	48757	7
CCSeg05	CC470	0	11/10/1998	48793	27.8 J
CCSeg05	CC471	0	11/10/1998	48794	17.9
CCSeg05	CC472	0	11/10/1998	48795	41.3
CCSeg05	CC473	0	11/10/1998	48796	36.9
CCSeg05	CC474	0	11/10/1998	48797	23.2
CCSeg05	CC475	0	11/10/1998	48798	43.5
CCSeg05	CC476	0	11/10/1998	48799	2.2
CCSeg05	CC477	0	11/10/1998	48800	215
CCSeg05	CC478	0	11/10/1998	48852	13.6
CCSeg05	CC479	0	11/10/1998	48764	10.1
CCSeg05	CC480	5	11/4/1998	48734	4.8 J

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Arsenic (Continued)					
CCSeg05	CC481	5	11/17/1998	49351	5.5
CCSeg05	CC481	12	11/17/1998	49352	3.9
NmSeg02	NM413	0	10/25/1998	48821	14.1
NmSeg02	NM414	0	10/25/1998	48822	12.8
NmSeg02	NM415	0	10/25/1998	48823	75.3
NmSeg02	NM416	0	10/25/1998	48824	20.1
NmSeg02	NM417	0	10/25/1998	48825	49.8
NmSeg02	NM429	0	11/10/1998	48780	1.6 J
NmSeg02	NM430	0	11/10/1998	48781	10
NmSeg02	NM431	0	11/10/1998	48782	23.8
NmSeg02	NM432	0	11/10/1998	48783	7.5
NmSeg02	NM433	0	11/10/1998	48784	5.4
NmSeg02	NM461	0	11/10/1998	48858	43.6
NmSeg02	NM462	0	11/10/1998	48859	14.5
NmSeg04	NM441	15	11/5/1998	48786	0.96 J
NmSeg04	NM442	5	11/4/1998	48850	18.3 J
NmSeg04	NM442	15	11/4/1998	48851	5.7 J
NmSeg04	NM453	0	11/10/1998	48785	16.6
NmSeg04	NM454	0	11/10/1998	48854	36.1
NmSeg04	NM455	0	11/10/1998	48855	52.8
NmSeg04	NM456	0	11/10/1998	48856	22.4
NmSeg04	NM457	0	11/10/1998	48857	17.4
NmSeg04	NM459	10	11/12/1998	49058	7.8
NmSeg04	NM459	25	11/12/1998	49057	7.2
NmSeg04	NM460	5	11/4/1998	48848	22.3 J
NmSeg04	NM460	10	11/4/1998	48849	11 J
Cadmium					
CCSeg02	CC402	5	10/27/1998	48839	12.5 J
CCSeg02	CC402	10	10/27/1998	48840	1.2 J
CCSeg02	CC402	25	10/27/1998	48841	0.35 UJ
CCSeg04	CC403	10	10/27/1998	48731	6.2 J
CCSeg04	CC403	20	10/27/1998	48732	0.33 UJ

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Cadmium (Continued)					
CCSeg04	CC405	0	11/10/1998	48770	53
CCSeg04	CC406	0	11/10/1998	48771	15.7
CCSeg04	CC407	0	11/10/1998	48772	1.9
CCSeg04	CC408	0	11/10/1998	48773	21.8
CCSeg04	CC409	15	10/27/1998	48746	0.31 UJ
CCSeg04	CC414	15	10/28/1998	48892	0.48 J
CCSeg04	CC414	20	10/28/1998	48893	0.73 J
CCSeg04	CC415	5	10/27/1998	48835	8.3 J
CCSeg04	CC415	10	10/27/1998	48836	186 J
CCSeg04	CC415	15	10/27/1998	48837	1.2 J
CCSeg04	CC417	10	10/28/1998	48833	4.2 J
CCSeg04	CC418	10	10/28/1998	48894	3.2 J
CCSeg04	CC419	5	10/28/1998	48832	441 J
CCSeg04	CC419	25	10/28/1998	48834	0.38 UJ
CCSeg04	CC422	10	10/29/1998	48895	1.9 J
CCSeg04	CC422	15	10/29/1998	48896	1.9 J
CCSeg04	CC426	0	10/25/1998	48826	1.8
CCSeg04	CC427	0	10/25/1998	48827	0.35 UJ
CCSeg04	CC428	0	10/25/1998	48828	3.4
CCSeg04	CC429	0	10/25/1998	48829	146
CCSeg04	CC430	0	10/25/1998	48830	9.4
CCSeg04	CC431	5	10/24/1998	48818	0.4 UJ
CCSeg04	CC431	45	10/24/1998	48819	0.5 UJ
CCSeg04	CC431	80	10/24/1998	48820	0.44 UJ
CCSeg04	CC432	15	10/26/1998	48842	1.4 J
CCSeg04	CC432	20	10/26/1998	48843	0.41 UJ
CCSeg04	CC433	5	11/6/1998	48790	3.8
CCSeg04	CC434	5	11/5/1998	48787	1.6
CCSeg04	CC434	10	11/5/1998	48788	0.54 J
CCSeg04	CC440	10	10/26/1998	48838	0.45 UJ
CCSeg04	CC441	20	11/6/1998	48752	0.45 U
CCSeg04	CC446	0	11/10/1998	48765	58.6

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Cadmium (Continued)					
CCSeg04	CC449	6	11/6/1998	48753	2.1
CCSeg04	CC449	20	11/6/1998	48754	0.42 U
CCSeg04	CC451	10	10/29/1998	48897	0.35 UJ
CCSeg05	CC452	15	10/29/1998	48844	0.31 UJ
CCSeg05	CC452	35	10/29/1998	48845	0.4 UJ
CCSeg05	CC453	5	11/5/1998	48737	15.8
CCSeg05	CC456	5	11/5/1998	48735	1.4
CCSeg05	CC456	15	11/5/1998	48736	0.4 U
CCSeg05	CC459	10	11/16/1998	48759	1.6
CCSeg05	CC459	35	11/16/1998	48760	0.33 UJ
CCSeg05	CC460	5	11/18/1998	48761	3.8
CCSeg05	CC460	20	11/18/1998	48762	2.3
CCSeg05	CC462	5	11/13/1998	49056	0.92 J
CCSeg05	CC462	10	11/13/1998	49055	2.7
CCSeg05	CC463	10	11/7/1998	49048	4.3
CCSeg05	CC463	40	11/9/1998	49049	0.37 U
CCSeg05	CC464	20	11/11/1998	49054	2.2
CCSeg05	CC464	43	11/11/1998	49053	0.4 U
CCSeg05	CC465	5	11/10/1998	49051	2.8
CCSeg05	CC465	10	11/10/1998	49050	0.72 J
CCSeg05	CC467	6	11/9/1998	48758	2.5
CCSeg05	CC468	10	11/10/1998	48755	0.28 U
CCSeg05	CC469	10	11/9/1998	48756	0.36 U
CCSeg05	CC469	15	11/9/1998	48757	1.7
CCSeg05	CC470	0	11/10/1998	48793	21.4
CCSeg05	CC471	0	11/10/1998	48794	1.2
CCSeg05	CC472	0	11/10/1998	48795	148
CCSeg05	CC473	0	11/10/1998	48796	41.4
CCSeg05	CC474	0	11/10/1998	48797	36.6
CCSeg05	CC475	0	11/10/1998	48798	24.9
CCSeg05	CC476	0	11/10/1998	48799	17.2
CCSeg05	CC477	0	11/10/1998	48800	35.6

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Cadmium (Continued)					
CCSeg05	CC479	0	11/10/1998	48764	11.9
CCSeg05	CC480	5	11/4/1998	48734	8.7
CCSeg05	CC481	5	11/17/1998	49351	3.9
CCSeg05	CC481	12	11/17/1998	49352	0.71 J
NmSeg02	NM413	0	10/25/1998	48821	6.4
NmSeg02	NM414	0	10/25/1998	48822	10.9
NmSeg02	NM415	0	10/25/1998	48823	19.3
NmSeg02	NM416	0	10/25/1998	48824	13.5
NmSeg02	NM417	0	10/25/1998	48825	3.3
NmSeg02	NM429	0	11/10/1998	48780	0.24 U
NmSeg02	NM430	0	11/10/1998	48781	16.4
NmSeg02	NM431	0	11/10/1998	48782	19.9
NmSeg02	NM432	0	11/10/1998	48783	3.1
NmSeg02	NM433	0	11/10/1998	48784	40.1
NmSeg02	NM461	0	11/10/1998	48858	14.5
NmSeg02	NM462	0	11/10/1998	48859	8.5
NmSeg04	NM441	15	11/5/1998	48786	0.45 U
NmSeg04	NM442	5	11/4/1998	48850	27.4
NmSeg04	NM442	15	11/4/1998	48851	0.44 U
NmSeg04	NM453	0	11/10/1998	48785	6.5
NmSeg04	NM454	0	11/10/1998	48854	20.1
NmSeg04	NM455	0	11/10/1998	48855	29.3
NmSeg04	NM456	0	11/10/1998	48856	8.7
NmSeg04	NM457	0	11/10/1998	48857	3.5
NmSeg04	NM459	10	11/12/1998	49058	0.04 U
NmSeg04	NM459	25	11/12/1998	49057	0.04 U
NmSeg04	NM460	5	11/4/1998	48848	1.7
NmSeg04	NM460	10	11/4/1998	48849	0.49 U
Copper					
CCSeg02	CC402	5	10/27/1998	48839	97.9 J
CCSeg02	CC402	10	10/27/1998	48840	14.4 J
CCSeg02	CC402	25	10/27/1998	48841	19.8 J

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Copper (Continued)					
CCSeg04	CC403	10	10/27/1998	48731	12 J
CCSeg04	CC403	20	10/27/1998	48732	18.3 J
CCSeg04	CC405	0	11/10/1998	48770	897
CCSeg04	CC406	0	11/10/1998	48771	121
CCSeg04	CC407	0	11/10/1998	48772	72.3
CCSeg04	CC408	0	11/10/1998	48773	788
CCSeg04	CC409	15	10/27/1998	48746	21.3 J
CCSeg04	CC414	15	10/28/1998	48892	20.7
CCSeg04	CC414	20	10/28/1998	48893	31
CCSeg04	CC415	5	10/27/1998	48835	87.7 J
CCSeg04	CC415	10	10/27/1998	48836	303 J
CCSeg04	CC415	15	10/27/1998	48837	15.1 J
CCSeg04	CC417	10	10/28/1998	48833	10.5 J
CCSeg04	CC418	10	10/28/1998	48894	14.8
CCSeg04	CC419	5	10/28/1998	48832	370 J
CCSeg04	CC419	25	10/28/1998	48834	3.9 J
CCSeg04	CC422	10	10/29/1998	48895	21.5 J
CCSeg04	CC422	15	10/29/1998	48896	13.6 J
CCSeg04	CC426	0	10/25/1998	48826	32.1
CCSeg04	CC427	0	10/25/1998	48827	40.4
CCSeg04	CC428	0	10/25/1998	48828	32.5
CCSeg04	CC429	0	10/25/1998	48829	521
CCSeg04	CC430	0	10/25/1998	48830	182
CCSeg04	CC431	5	10/24/1998	48818	14.1
CCSeg04	CC431	45	10/24/1998	48819	21.9
CCSeg04	CC431	80	10/24/1998	48820	11.5
CCSeg04	CC432	15	10/26/1998	48842	12.2
CCSeg04	CC432	20	10/26/1998	48843	17.3
CCSeg04	CC433	5	11/6/1998	48790	16.1 J
CCSeg04	CC433	10	11/6/1998	48791	31.8 J
CCSeg04	CC434	10	11/5/1998	48788	15.7 J
CCSeg04	CC440	10	10/26/1998	48838	15.2

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Copper (Continued)					
CCSeg04	CC446	0	11/10/1998	48765	323
CCSeg04	CC447	0	11/10/1998	48766	295
CCSeg04	CC449	6	11/6/1998	48753	9.1 J
CCSeg04	CC449	20	11/6/1998	48754	13.8 J
CCSeg04	CC451	10	10/29/1998	48897	16.2 J
CCSeg04	CC451	25	10/29/1998	48898	16 J
CCSeg05	CC452	15	10/29/1998	48844	12.2 J
CCSeg05	CC452	35	10/29/1998	48845	26.7 J
CCSeg05	CC453	5	11/5/1998	48737	45.9 J
CCSeg05	CC456	5	11/5/1998	48735	9.6 J
CCSeg05	CC456	15	11/5/1998	48736	24 J
CCSeg05	CC459	10	11/16/1998	48759	13.6
CCSeg05	CC459	35	11/16/1998	48760	16.8
CCSeg05	CC460	5	11/18/1998	48761	6.1
CCSeg05	CC460	20	11/18/1998	48762	13
CCSeg05	CC462	5	11/13/1998	49056	6.9
CCSeg05	CC462	10	11/13/1998	49055	13.3
CCSeg05	CC463	10	11/7/1998	49048	37.5
CCSeg05	CC463	40	11/9/1998	49049	17.1
CCSeg05	CC464	20	11/11/1998	49054	21
CCSeg05	CC464	43	11/11/1998	49053	22
CCSeg05	CC465	5	11/10/1998	49051	13.6
CCSeg05	CC465	10	11/10/1998	49050	16.9
CCSeg05	CC467	6	11/9/1998	48758	13 J
CCSeg05	CC468	10	11/10/1998	48755	11.6
CCSeg05	CC469	10	11/9/1998	48756	10.5
CCSeg05	CC469	15	11/9/1998	48757	3.5 J
CCSeg05	CC470	0	11/10/1998	48793	190 J
CCSeg05	CC471	0	11/10/1998	48794	29.7
CCSeg05	CC472	0	11/10/1998	48795	412
CCSeg05	CC473	0	11/10/1998	48796	165
CCSeg05	CC474	0	11/10/1998	48797	108

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Copper (Continued)					
CCSeg05	CC475	0	11/10/1998	48798	156
CCSeg05	CC476	0	11/10/1998	48799	30.7
CCSeg05	CC477	0	11/10/1998	48800	284
CCSeg05	CC478	0	11/10/1998	48852	82.7
CCSeg05	CC479	0	11/10/1998	48764	103
CCSeg05	CC480	5	11/4/1998	48734	18.8 J
CCSeg05	CC481	5	11/17/1998	49351	27.9
CCSeg05	CC481	12	11/17/1998	49352	11.5
NmSeg02	NM413	0	10/25/1998	48821	63.3
NmSeg02	NM414	0	10/25/1998	48822	127
NmSeg02	NM415	0	10/25/1998	48823	174
NmSeg02	NM416	0	10/25/1998	48824	191
NmSeg02	NM417	0	10/25/1998	48825	40
NmSeg02	NM429	0	11/10/1998	48780	70
NmSeg02	NM430	0	11/10/1998	48781	81.1
NmSeg02	NM431	0	11/10/1998	48782	136
NmSeg02	NM432	0	11/10/1998	48783	122
NmSeg02	NM433	0	11/10/1998	48784	70.3
NmSeg02	NM461	0	11/10/1998	48858	288
NmSeg02	NM462	0	11/10/1998	48859	67.1
NmSeg04	NM441	15	11/5/1998	48786	20.5 J
NmSeg04	NM442	5	11/4/1998	48850	153 J
NmSeg04	NM442	15	11/4/1998	48851	14.6 J
NmSeg04	NM453	0	11/10/1998	48785	99.6
NmSeg04	NM454	0	11/10/1998	48854	201
NmSeg04	NM455	0	11/10/1998	48855	164
NmSeg04	NM456	0	11/10/1998	48856	84.2
NmSeg04	NM457	0	11/10/1998	48857	59.6
NmSeg04	NM459	10	11/12/1998	49058	17.9
NmSeg04	NM459	25	11/12/1998	49057	9.5
NmSeg04	NM460	5	11/4/1998	48848	29.2 J
NmSeg04	NM460	10	11/4/1998	48849	17.2 J

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Iron					
CCSeg02	CC402	5	10/27/1998	48839	16200 J
CCSeg02	CC402	10	10/27/1998	48840	10000 J
CCSeg02	CC402	25	10/27/1998	48841	15800 J
CCSeg04	CC403	10	10/27/1998	48731	11900 J
CCSeg04	CC403	20	10/27/1998	48732	14000 J
CCSeg04	CC405	0	11/10/1998	48770	87900
CCSeg04	CC406	0	11/10/1998	48771	25200
CCSeg04	CC407	0	11/10/1998	48772	46300
CCSeg04	CC408	0	11/10/1998	48773	77400
CCSeg04	CC409	15	10/27/1998	48746	14600 J
CCSeg04	CC414	15	10/28/1998	48892	11700
CCSeg04	CC414	20	10/28/1998	48893	14600
CCSeg04	CC415	5	10/27/1998	48835	17600 J
CCSeg04	CC415	10	10/27/1998	48836	45300 J
CCSeg04	CC415	15	10/27/1998	48837	15700 J
CCSeg04	CC417	10	10/28/1998	48833	11000 J
CCSeg04	CC418	10	10/28/1998	48894	9570
CCSeg04	CC419	5	10/28/1998	48832	50700 J
CCSeg04	CC419	25	10/28/1998	48834	12500 J
CCSeg04	CC422	10	10/29/1998	48895	7690 J
CCSeg04	CC422	15	10/29/1998	48896	9550 J
CCSeg04	CC426	0	10/25/1998	48826	18800
CCSeg04	CC427	0	10/25/1998	48827	19300
CCSeg04	CC428	0	10/25/1998	48828	16000
CCSeg04	CC429	0	10/25/1998	48829	46000
CCSeg04	CC430	0	10/25/1998	48830	20100
CCSeg04	CC431	5	10/24/1998	48818	13400
CCSeg04	CC431	45	10/24/1998	48819	21200
CCSeg04	CC431	80	10/24/1998	48820	9400
CCSeg04	CC432	15	10/26/1998	48842	9620
CCSeg04	CC432	20	10/26/1998	48843	16600
CCSeg04	CC433	5	11/6/1998	48790	10800

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Iron (Continued)					
CCSeg04	CC434	10	11/5/1998	48788	9110
CCSeg04	CC440	10	10/26/1998	48838	9560
CCSeg04	CC441	20	11/6/1998	48752	14100
CCSeg04	CC446	0	11/10/1998	48765	23700
CCSeg04	CC447	0	11/10/1998	48766	37400
CCSeg04	CC449	6	11/6/1998	48753	10600
CCSeg04	CC449	20	11/6/1998	48754	12000
CCSeg04	CC451	10	10/29/1998	48897	11700 J
CCSeg04	CC451	25	10/29/1998	48898	13200 J
CCSeg05	CC452	15	10/29/1998	48844	8270 J
CCSeg05	CC452	35	10/29/1998	48845	27000 J
CCSeg05	CC453	5	11/5/1998	48737	11000
CCSeg05	CC456	5	11/5/1998	48735	10100
CCSeg05	CC456	15	11/5/1998	48736	14900
CCSeg05	CC459	10	11/16/1998	48759	7230
CCSeg05	CC459	35	11/16/1998	48760	17800
CCSeg05	CC460	5	11/18/1998	48761	9150
CCSeg05	CC460	20	11/18/1998	48762	6160
CCSeg05	CC462	5	11/13/1998	49056	1980
CCSeg05	CC462	10	11/13/1998	49055	7360
CCSeg05	CC463	10	11/7/1998	49048	13700
CCSeg05	CC463	40	11/9/1998	49049	12200
CCSeg05	CC464	20	11/11/1998	49054	14700
CCSeg05	CC464	43	11/11/1998	49053	39400
CCSeg05	CC465	5	11/10/1998	49051	7480
CCSeg05	CC465	10	11/10/1998	49050	11200
CCSeg05	CC467	6	11/9/1998	48758	9890
CCSeg05	CC468	10	11/10/1998	48755	7980
CCSeg05	CC469	10	11/9/1998	48756	6460
CCSeg05	CC469	15	11/9/1998	48757	9580
CCSeg05	CC470	0	11/10/1998	48793	33000
CCSeg05	CC471	0	11/10/1998	48794	20600

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Iron (Continued)					
CCSeg05	CC472	0	11/10/1998	48795	46600
CCSeg05	CC473	0	11/10/1998	48796	42600
CCSeg05	CC474	0	11/10/1998	48797	44900
CCSeg05	CC475	0	11/10/1998	48798	33300
CCSeg05	CC476	0	11/10/1998	48799	8670
CCSeg05	CC477	0	11/10/1998	48800	58000
CCSeg05	CC479	0	11/10/1998	48764	23100
CCSeg05	CC480	5	11/4/1998	48734	8490
CCSeg05	CC481	5	11/17/1998	49351	7230
CCSeg05	CC481	12	11/17/1998	49352	6800
NmSeg02	NM413	0	10/25/1998	48821	32700
NmSeg02	NM414	0	10/25/1998	48822	31800
NmSeg02	NM415	0	10/25/1998	48823	36000
NmSeg02	NM416	0	10/25/1998	48824	34900
NmSeg02	NM417	0	10/25/1998	48825	35300
NmSeg02	NM429	0	11/10/1998	48780	18500
NmSeg02	NM430	0	11/10/1998	48781	27900
NmSeg02	NM431	0	11/10/1998	48782	49500
NmSeg02	NM432	0	11/10/1998	48783	37700
NmSeg02	NM433	0	11/10/1998	48784	28400
NmSeg02	NM461	0	11/10/1998	48858	64400
NmSeg02	NM462	0	11/10/1998	48859	29300
NmSeg04	NM441	15	11/5/1998	48786	13100
NmSeg04	NM442	5	11/4/1998	48850	33500
NmSeg04	NM442	15	11/4/1998	48851	14400
NmSeg04	NM453	0	11/10/1998	48785	16700
NmSeg04	NM454	0	11/10/1998	48854	35500
NmSeg04	NM455	0	11/10/1998	48855	33800
NmSeg04	NM456	0	11/10/1998	48856	19000
NmSeg04	NM457	0	11/10/1998	48857	22000
NmSeg04	NM459	10	11/12/1998	49058	14600
NmSeg04	NM459	25	11/12/1998	49057	8770

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Iron (Continued)					
NmSeg04	NM460	5	11/4/1998	48848	15800
NmSeg04	NM460	10	11/4/1998	48849	15400
Lead					
CCSeg02	CC402	5	10/27/1998	48839	12400
CCSeg02	CC402	10	10/27/1998	48840	90.5
CCSeg02	CC402	25	10/27/1998	48841	23.6
CCSeg04	CC403	10	10/27/1998	48731	514
CCSeg04	CC403	20	10/27/1998	48732	27.8
CCSeg04	CC405	0	11/10/1998	48770	49800
CCSeg04	CC406	0	11/10/1998	48771	3590
CCSeg04	CC407	0	11/10/1998	48772	1510
CCSeg04	CC408	0	11/10/1998	48773	4750
CCSeg04	CC409	15	10/27/1998	48746	98.2
CCSeg04	CC414	15	10/28/1998	48892	75
CCSeg04	CC414	20	10/28/1998	48893	73.9
CCSeg04	CC415	5	10/27/1998	48835	3420
CCSeg04	CC415	10	10/27/1998	48836	44600
CCSeg04	CC415	15	10/27/1998	48837	760
CCSeg04	CC417	10	10/28/1998	48833	663
CCSeg04	CC418	10	10/28/1998	48894	1560
CCSeg04	CC419	5	10/28/1998	48832	59300
CCSeg04	CC419	25	10/28/1998	48834	23.3
CCSeg04	CC422	10	10/29/1998	48895	1320
CCSeg04	CC422	15	10/29/1998	48896	307
CCSeg04	CC426	0	10/25/1998	48826	306
CCSeg04	CC427	0	10/25/1998	48827	104
CCSeg04	CC428	0	10/25/1998	48828	311
CCSeg04	CC429	0	10/25/1998	48829	63700
CCSeg04	CC430	0	10/25/1998	48830	4770
CCSeg04	CC431	5	10/24/1998	48818	11.8
CCSeg04	CC431	45	10/24/1998	48819	17.6
CCSeg04	CC431	80	10/24/1998	48820	13.8

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Lead (Continued)					
CCSeg04	CC432	15	10/26/1998	48842	113
CCSeg04	CC432	20	10/26/1998	48843	17.2
CCSeg04	CC433	5	11/6/1998	48790	586
CCSeg04	CC434	5	11/5/1998	48787	103
CCSeg04	CC434	10	11/5/1998	48788	37.8
CCSeg04	CC440	10	10/26/1998	48838	31.7
CCSeg04	CC441	20	11/6/1998	48752	44.3
CCSeg04	CC446	0	11/10/1998	48765	20200
CCSeg04	CC447	0	11/10/1998	48766	24900
CCSeg04	CC449	6	11/6/1998	48753	139
CCSeg04	CC449	20	11/6/1998	48754	47.1
CCSeg04	CC451	10	10/29/1998	48897	111
CCSeg04	CC451	25	10/29/1998	48898	32.5
CCSeg05	CC452	15	10/29/1998	48844	20.5
CCSeg05	CC452	35	10/29/1998	48845	27.7
CCSeg05	CC453	5	11/5/1998	48737	6440
CCSeg05	CC456	5	11/5/1998	48735	149
CCSeg05	CC456	15	11/5/1998	48736	40.6
CCSeg05	CC459	10	11/16/1998	48759	84.7
CCSeg05	CC459	35	11/16/1998	48760	36.3
CCSeg05	CC460	5	11/18/1998	48761	74.2
CCSeg05	CC460	20	11/18/1998	48762	22
CCSeg05	CC462	5	11/13/1998	49056	17.8
CCSeg05	CC462	10	11/13/1998	49055	44.4
CCSeg05	CC463	10	11/7/1998	49048	1570
CCSeg05	CC463	40	11/9/1998	49049	26.4
CCSeg05	CC464	5	11/11/1998	49052	6790
CCSeg05	CC464	20	11/11/1998	49054	26.9
CCSeg05	CC464	43	11/11/1998	49053	7.5
CCSeg05	CC465	5	11/10/1998	49051	126
CCSeg05	CC465	10	11/10/1998	49050	78.8
CCSeg05	CC467	6	11/9/1998	48758	925

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Lead (Continued)					
CCSeg05	CC468	10	11/10/1998	48755	18.2
CCSeg05	CC469	10	11/9/1998	48756	86.8
CCSeg05	CC469	15	11/9/1998	48757	64.8
CCSeg05	CC470	0	11/10/1998	48793	8270
CCSeg05	CC471	0	11/10/1998	48794	1860
CCSeg05	CC472	0	11/10/1998	48795	32300
CCSeg05	CC473	0	11/10/1998	48796	9490
CCSeg05	CC474	0	11/10/1998	48797	7900
CCSeg05	CC475	0	11/10/1998	48798	7650
CCSeg05	CC476	0	11/10/1998	48799	1200
CCSeg05	CC477	0	11/10/1998	48800	16100
CCSeg05	CC478	0	11/10/1998	48852	3710
CCSeg05	CC479	0	11/10/1998	48764	4880
CCSeg05	CC480	5	11/4/1998	48734	114
CCSeg05	CC481	5	11/17/1998	49351	2450
CCSeg05	CC481	12	11/17/1998	49352	114
NmSeg02	NM413	0	10/25/1998	48821	4200
NmSeg02	NM414	0	10/25/1998	48822	2350
NmSeg02	NM415	0	10/25/1998	48823	2050
NmSeg02	NM416	0	10/25/1998	48824	4500
NmSeg02	NM417	0	10/25/1998	48825	3870
NmSeg02	NM429	0	11/10/1998	48780	83.4
NmSeg02	NM430	0	11/10/1998	48781	3230
NmSeg02	NM431	0	11/10/1998	48782	4530
NmSeg02	NM432	0	11/10/1998	48783	6210
NmSeg02	NM433	0	11/10/1998	48784	4070
NmSeg02	NM461	0	11/10/1998	48858	16100
NmSeg02	NM462	0	11/10/1998	48859	4610
NmSeg04	NM441	15	11/5/1998	48786	23.1
NmSeg04	NM442	5	11/4/1998	48850	13000
NmSeg04	NM442	15	11/4/1998	48851	599
NmSeg04	NM453	0	11/10/1998	48785	2780

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Lead (Continued)					
NmSeg04	NM454	0	11/10/1998	48854	6450
NmSeg04	NM455	0	11/10/1998	48855	7770
NmSeg04	NM456	0	11/10/1998	48856	1890
NmSeg04	NM457	0	11/10/1998	48857	1060
NmSeg04	NM459	10	11/12/1998	49058	40
NmSeg04	NM459	25	11/12/1998	49057	20.7
NmSeg04	NM460	5	11/4/1998	48848	61.1
NmSeg04	NM460	10	11/4/1998	48849	42.2
Manganese					
CCSeg02	CC402	5	10/27/1998	48839	980 J
CCSeg02	CC402	10	10/27/1998	48840	101 J
CCSeg02	CC402	25	10/27/1998	48841	534 J
CCSeg04	CC403	10	10/27/1998	48731	946 J
CCSeg04	CC403	20	10/27/1998	48732	560 J
CCSeg04	CC405	0	11/10/1998	48770	3360
CCSeg04	CC406	0	11/10/1998	48771	1020
CCSeg04	CC407	0	11/10/1998	48772	1800
CCSeg04	CC408	0	11/10/1998	48773	2930
CCSeg04	CC409	15	10/27/1998	48746	503 J
CCSeg04	CC414	15	10/28/1998	48892	513
CCSeg04	CC414	20	10/28/1998	48893	649
CCSeg04	CC415	5	10/27/1998	48835	1750 J
CCSeg04	CC415	10	10/27/1998	48836	2840 J
CCSeg04	CC415	15	10/27/1998	48837	948 J
CCSeg04	CC417	10	10/28/1998	48833	846 J
CCSeg04	CC418	10	10/28/1998	48894	633
CCSeg04	CC419	5	10/28/1998	48832	3350 J
CCSeg04	CC419	25	10/28/1998	48834	1140 J
CCSeg04	CC422	10	10/29/1998	48895	781 J
CCSeg04	CC422	15	10/29/1998	48896	657 J
CCSeg04	CC426	0	10/25/1998	48826	882
CCSeg04	CC427	0	10/25/1998	48827	503

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Manganese (Continued)					
CCSeg04	CC428	0	10/25/1998	48828	799
CCSeg04	CC429	0	10/25/1998	48829	3020
CCSeg04	CC430	0	10/25/1998	48830	1270
CCSeg04	CC431	5	10/24/1998	48818	363
CCSeg04	CC431	45	10/24/1998	48819	514
CCSeg04	CC431	80	10/24/1998	48820	619
CCSeg04	CC432	15	10/26/1998	48842	505
CCSeg04	CC432	20	10/26/1998	48843	607
CCSeg04	CC433	5	11/6/1998	48790	502 J
CCSeg04	CC433	10	11/6/1998	48791	10100 J
CCSeg04	CC434	5	11/5/1998	48787	461 J
CCSeg04	CC434	10	11/5/1998	48788	481 J
CCSeg04	CC440	10	10/26/1998	48838	462
CCSeg04	CC441	20	11/6/1998	48752	500 J
CCSeg04	CC446	0	11/10/1998	48765	3450
CCSeg04	CC447	0	11/10/1998	48766	8460
CCSeg04	CC449	6	11/6/1998	48753	281 J
CCSeg04	CC449	20	11/6/1998	48754	630 J
CCSeg04	CC451	10	10/29/1998	48897	496 J
CCSeg04	CC451	25	10/29/1998	48898	378 J
CCSeg05	CC452	15	10/29/1998	48844	995 J
CCSeg05	CC452	35	10/29/1998	48845	560 J
CCSeg05	CC453	5	11/5/1998	48737	958 J
CCSeg05	CC456	5	11/5/1998	48735	113 J
CCSeg05	CC456	15	11/5/1998	48736	614 J
CCSeg05	CC459	10	11/16/1998	48759	380
CCSeg05	CC459	35	11/16/1998	48760	187
CCSeg05	CC460	5	11/18/1998	48761	487
CCSeg05	CC460	20	11/18/1998	48762	331
CCSeg05	CC462	5	11/13/1998	49056	246 J
CCSeg05	CC462	10	11/13/1998	49055	730
CCSeg05	CC463	10	11/7/1998	49048	564

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Manganese (Continued)					
CCSeg05	CC463	40	11/9/1998	49049	582
CCSeg05	CC464	20	11/11/1998	49054	526
CCSeg05	CC464	43	11/11/1998	49053	366
CCSeg05	CC465	5	11/10/1998	49051	451
CCSeg05	CC465	10	11/10/1998	49050	615
CCSeg05	CC467	6	11/9/1998	48758	1040 J
CCSeg05	CC468	10	11/10/1998	48755	321
CCSeg05	CC469	10	11/9/1998	48756	38.8
CCSeg05	CC469	15	11/9/1998	48757	57.1
CCSeg05	CC470	0	11/10/1998	48793	1490 J
CCSeg05	CC471	0	11/10/1998	48794	988
CCSeg05	CC472	0	11/10/1998	48795	2580
CCSeg05	CC473	0	11/10/1998	48796	3650
CCSeg05	CC474	0	11/10/1998	48797	4920
CCSeg05	CC475	0	11/10/1998	48798	2690
CCSeg05	CC476	0	11/10/1998	48799	195
CCSeg05	CC477	0	11/10/1998	48800	3930
CCSeg05	CC478	0	11/10/1998	48852	764
CCSeg05	CC479	0	11/10/1998	48764	1120
CCSeg05	CC480	5	11/4/1998	48734	123 J
CCSeg05	CC481	5	11/17/1998	49351	423
CCSeg05	CC481	12	11/17/1998	49352	361
NmSeg02	NM413	0	10/25/1998	48821	1270
NmSeg02	NM414	0	10/25/1998	48822	1250
NmSeg02	NM415	0	10/25/1998	48823	810
NmSeg02	NM416	0	10/25/1998	48824	1360
NmSeg02	NM417	0	10/25/1998	48825	910
NmSeg02	NM429	0	11/10/1998	48780	2570
NmSeg02	NM430	0	11/10/1998	48781	798
NmSeg02	NM431	0	11/10/1998	48782	327
NmSeg02	NM432	0	11/10/1998	48783	351
NmSeg02	NM433	0	11/10/1998	48784	1560

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Manganese (Continued)					
NmSeg02	NM461	0	11/10/1998	48858	1340
NmSeg02	NM462	0	11/10/1998	48859	1080
NmSeg04	NM441	15	11/5/1998	48786	1210 J
NmSeg04	NM442	5	11/4/1998	48850	648 J
NmSeg04	NM442	15	11/4/1998	48851	955 J
NmSeg04	NM453	0	11/10/1998	48785	759
NmSeg04	NM454	0	11/10/1998	48854	1510
NmSeg04	NM455	0	11/10/1998	48855	3100
NmSeg04	NM456	0	11/10/1998	48856	1010
NmSeg04	NM457	0	11/10/1998	48857	811
NmSeg04	NM459	10	11/12/1998	49058	539 J
NmSeg04	NM459	25	11/12/1998	49057	226 J
NmSeg04	NM460	5	11/4/1998	48848	1670 J
NmSeg04	NM460	10	11/4/1998	48849	466 J
Mercury					
CCSeg02	CC402	5	10/27/1998	48839	2.1
CCSeg02	CC402	10	10/27/1998	48840	0.06 UJ
CCSeg02	CC402	25	10/27/1998	48841	0.06 UJ
CCSeg04	CC403	10	10/27/1998	48731	0.06 UJ
CCSeg04	CC403	20	10/27/1998	48732	0.05 UJ
CCSeg04	CC405	0	11/10/1998	48770	4.3 J
CCSeg04	CC406	0	11/10/1998	48771	0.6 J
CCSeg04	CC407	0	11/10/1998	48772	0.79 J
CCSeg04	CC408	0	11/10/1998	48773	6 J
CCSeg04	CC409	15	10/27/1998	48746	0.06 UJ
CCSeg04	CC414	15	10/28/1998	48892	0.05 U
CCSeg04	CC414	20	10/28/1998	48893	0.05 U
CCSeg04	CC415	5	10/27/1998	48835	4.2
CCSeg04	CC415	10	10/27/1998	48836	13
CCSeg04	CC415	15	10/27/1998	48837	0.7
CCSeg04	CC417	10	10/28/1998	48833	0.11 J
CCSeg04	CC418	10	10/28/1998	48894	0.11

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Mercury (Continued)					
CCSeg04	CC419	5	10/28/1998	48832	13.7
CCSeg04	CC419	25	10/28/1998	48834	0.06 UJ
CCSeg04	CC422	10	10/29/1998	48895	0.12 J
CCSeg04	CC422	15	10/29/1998	48896	0.06 UJ
CCSeg04	CC426	0	10/25/1998	48826	0.19 J
CCSeg04	CC427	0	10/25/1998	48827	0.12 J
CCSeg04	CC428	0	10/25/1998	48828	0.11 J
CCSeg04	CC429	0	10/25/1998	48829	2.2
CCSeg04	CC430	0	10/25/1998	48830	0.81
CCSeg04	CC431	5	10/24/1998	48818	0.05 U
CCSeg04	CC431	45	10/24/1998	48819	0.06 U
CCSeg04	CC431	80	10/24/1998	48820	0.05 U
CCSeg04	CC432	15	10/26/1998	48842	0.05 U
CCSeg04	CC432	20	10/26/1998	48843	0.05 U
CCSeg04	CC433	5	11/6/1998	48790	0.07 J
CCSeg04	CC433	10	11/6/1998	48791	0.05 UJ
CCSeg04	CC434	5	11/5/1998	48787	0.05 UJ
CCSeg04	CC434	10	11/5/1998	48788	0.05 UJ
CCSeg04	CC440	10	10/26/1998	48838	0.06 U
CCSeg04	CC441	20	11/6/1998	48752	0.06 UJ
CCSeg04	CC446	0	11/10/1998	48765	5.2 J
CCSeg04	CC449	6	11/6/1998	48753	0.06 UJ
CCSeg04	CC449	20	11/6/1998	48754	0.05 UJ
CCSeg04	CC451	10	10/29/1998	48897	0.06 UJ
CCSeg04	CC451	25	10/29/1998	48898	0.05 UJ
CCSeg05	CC452	15	10/29/1998	48844	0.05 UJ
CCSeg05	CC452	35	10/29/1998	48845	0.06 UJ
CCSeg05	CC453	5	11/5/1998	48737	1.1 J
CCSeg05	CC456	5	11/5/1998	48735	0.05 UJ
CCSeg05	CC456	15	11/5/1998	48736	0.06 UJ
CCSeg05	CC459	10	11/16/1998	48759	0.05 UJ
CCSeg05	CC459	35	11/16/1998	48760	0.06 UJ

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Mercury (Continued)					
CCSeg05	CC460	5	11/18/1998	48761	0.05 UJ
CCSeg05	CC460	20	11/18/1998	48762	0.05 UJ
CCSeg05	CC462	5	11/13/1998	49056	0.05 UJ
CCSeg05	CC462	10	11/13/1998	49055	0.06 UJ
CCSeg05	CC463	10	11/7/1998	49048	0.31
CCSeg05	CC463	40	11/9/1998	49049	0.06 UJ
CCSeg05	CC464	20	11/11/1998	49054	0.06 UJ
CCSeg05	CC464	43	11/11/1998	49053	0.06 UJ
CCSeg05	CC465	5	11/10/1998	49051	0.15 J
CCSeg05	CC465	10	11/10/1998	49050	0.05 UJ
CCSeg05	CC467	6	11/9/1998	48758	0.05 UJ
CCSeg05	CC468	10	11/10/1998	48755	0.05 UJ
CCSeg05	CC469	10	11/9/1998	48756	0.06 UJ
CCSeg05	CC469	15	11/9/1998	48757	0.32
CCSeg05	CC470	0	11/10/1998	48793	4.9 J
CCSeg05	CC471	0	11/10/1998	48794	0.3 J
CCSeg05	CC472	0	11/10/1998	48795	15.5 J
CCSeg05	CC473	0	11/10/1998	48796	4.5 J
CCSeg05	CC474	0	11/10/1998	48797	3 J
CCSeg05	CC475	0	11/10/1998	48798	4.1 J
CCSeg05	CC476	0	11/10/1998	48799	0.17 J
CCSeg05	CC477	0	11/10/1998	48800	3.5 J
CCSeg05	CC478	0	11/10/1998	48852	1.2 J
CCSeg05	CC479	0	11/10/1998	48764	3.3 J
CCSeg05	CC480	5	11/4/1998	48734	0.06 UJ
CCSeg05	CC481	5	11/17/1998	49351	0.66
CCSeg05	CC481	12	11/17/1998	49352	0.19 J
NmSeg02	NM413	0	10/25/1998	48821	0.2 J
NmSeg02	NM414	0	10/25/1998	48822	0.11 J
NmSeg02	NM415	0	10/25/1998	48823	0.15 J
NmSeg02	NM416	0	10/25/1998	48824	0.82
NmSeg02	NM417	0	10/25/1998	48825	0.09 J

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Mercury (Continued)					
NmSeg02	NM429	0	11/10/1998	48780	9
NmSeg02	NM430	0	11/10/1998	48781	2.2
NmSeg02	NM431	0	11/10/1998	48782	9.5
NmSeg02	NM432	0	11/10/1998	48783	6.2
NmSeg02	NM433	0	11/10/1998	48784	2.5
NmSeg02	NM461	0	11/10/1998	48858	1.3
NmSeg02	NM462	0	11/10/1998	48859	0.63
NmSeg04	NM441	15	11/5/1998	48786	0.05 UJ
NmSeg04	NM442	5	11/4/1998	48850	5.1 J
NmSeg04	NM442	15	11/4/1998	48851	0.05 UJ
NmSeg04	NM453	0	11/10/1998	48785	1
NmSeg04	NM454	0	11/10/1998	48854	1.4
NmSeg04	NM455	0	11/10/1998	48855	7.6
NmSeg04	NM456	0	11/10/1998	48856	0.62
NmSeg04	NM457	0	11/10/1998	48857	0.38
NmSeg04	NM459	10	11/12/1998	49058	0.06 J
NmSeg04	NM459	25	11/12/1998	49057	0.06 U
NmSeg04	NM460	5	11/4/1998	48848	0.05 J
NmSeg04	NM460	10	11/4/1998	48849	0.06 UJ
Silver					
CCSeg02	CC402	5	10/27/1998	48839	24.4 J
CCSeg02	CC402	10	10/27/1998	48840	0.98 UJ
CCSeg02	CC402	25	10/27/1998	48841	0.44 UJ
CCSeg04	CC403	10	10/27/1998	48731	1.2 UJ
CCSeg04	CC403	20	10/27/1998	48732	0.54 UJ
CCSeg04	CC404	0	11/10/1998	48768	5.9
CCSeg04	CC405	0	11/10/1998	48770	157
CCSeg04	CC406	0	11/10/1998	48771	10.4
CCSeg04	CC407	0	11/10/1998	48772	3.7
CCSeg04	CC408	0	11/10/1998	48773	153
CCSeg04	CC409	15	10/27/1998	48746	0.6 UJ
CCSeg04	CC414	15	10/28/1998	48892	0.7 U

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Silver (Continued)					
CCSeg04	CC414	20	10/28/1998	48893	0.68 U
CCSeg04	CC415	5	10/27/1998	48835	7.5 J
CCSeg04	CC415	10	10/27/1998	48836	126 J
CCSeg04	CC415	15	10/27/1998	48837	2.4 UJ
CCSeg04	CC417	10	10/28/1998	48833	1.7 UJ
CCSeg04	CC418	10	10/28/1998	48894	0.67 U
CCSeg04	CC419	5	10/28/1998	48832	123 J
CCSeg04	CC419	25	10/28/1998	48834	0.48 UJ
CCSeg04	CC422	10	10/29/1998	48895	1.1 UJ
CCSeg04	CC422	15	10/29/1998	48896	1.3 UJ
CCSeg04	CC426	0	10/25/1998	48826	0.59 J
CCSeg04	CC427	0	10/25/1998	48827	0.17 U
CCSeg04	CC428	0	10/25/1998	48828	0.45 J
CCSeg04	CC429	0	10/25/1998	48829	88.9
CCSeg04	CC430	0	10/25/1998	48830	10.3
CCSeg04	CC431	5	10/24/1998	48818	0.61 U
CCSeg04	CC431	45	10/24/1998	48819	0.74 U
CCSeg04	CC431	80	10/24/1998	48820	0.65 U
CCSeg04	CC432	15	10/26/1998	48842	0.6 U
CCSeg04	CC432	20	10/26/1998	48843	0.62 U
CCSeg04	CC433	5	11/6/1998	48790	0.61 U
CCSeg04	CC434	5	11/5/1998	48787	0.63 U
CCSeg04	CC434	10	11/5/1998	48788	0.68 U
CCSeg04	CC440	10	10/26/1998	48838	0.68 U
CCSeg04	CC441	20	11/6/1998	48752	0.67 U
CCSeg04	CC446	0	11/10/1998	48765	50.3
CCSeg04	CC449	6	11/6/1998	48753	0.68 U
CCSeg04	CC449	20	11/6/1998	48754	0.63 U
CCSeg04	CC451	10	10/29/1998	48897	0.62 UJ
CCSeg04	CC451	25	10/29/1998	48898	0.37 UJ
CCSeg05	CC452	15	10/29/1998	48844	0.57 UJ
CCSeg05	CC452	35	10/29/1998	48845	0.5 UJ

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Silver (Continued)					
CCSeg05	CC453	5	11/5/1998	48737	11.5
CCSeg05	CC456	5	11/5/1998	48735	0.62 U
CCSeg05	CC456	15	11/5/1998	48736	0.61 U
CCSeg05	CC459	10	11/16/1998	48759	0.2 U
CCSeg05	CC459	35	11/16/1998	48760	0.17 U
CCSeg05	CC460	5	11/18/1998	48761	0.19 U
CCSeg05	CC460	20	11/18/1998	48762	0.16 U
CCSeg05	CC462	5	11/13/1998	49056	0.21 U
CCSeg05	CC462	10	11/13/1998	49055	0.19 U
CCSeg05	CC463	10	11/7/1998	49048	5.3
CCSeg05	CC463	40	11/9/1998	49049	0.21 U
CCSeg05	CC464	5	11/11/1998	49052	16.2
CCSeg05	CC464	20	11/11/1998	49054	0.22 U
CCSeg05	CC464	43	11/11/1998	49053	0.22 U
CCSeg05	CC465	5	11/10/1998	49051	0.36 J
CCSeg05	CC465	10	11/10/1998	49050	0.21 U
CCSeg05	CC467	6	11/9/1998	48758	0.64 U
CCSeg05	CC468	10	11/10/1998	48755	0.16 U
CCSeg05	CC469	10	11/9/1998	48756	0.2 U
CCSeg05	CC469	15	11/9/1998	48757	0.2 U
CCSeg05	CC470	0	11/10/1998	48793	19.1
CCSeg05	CC471	0	11/10/1998	48794	1.4 J
CCSeg05	CC472	0	11/10/1998	48795	82.3
CCSeg05	CC473	0	11/10/1998	48796	21.8
CCSeg05	CC474	0	11/10/1998	48797	12.9
CCSeg05	CC475	0	11/10/1998	48798	19.3
CCSeg05	CC476	0	11/10/1998	48799	0.99 J
CCSeg05	CC477	0	11/10/1998	48800	35.4
CCSeg05	CC479	0	11/10/1998	48764	12.2
CCSeg05	CC480	5	11/4/1998	48734	0.85 U
CCSeg05	CC481	5	11/17/1998	49351	6.4
CCSeg05	CC481	12	11/17/1998	49352	0.22 J

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Silver (Continued)					
NmSeg02	NM413	0	10/25/1998	48821	4
NmSeg02	NM414	0	10/25/1998	48822	2.4
NmSeg02	NM415	0	10/25/1998	48823	2.3
NmSeg02	NM416	0	10/25/1998	48824	7.4
NmSeg02	NM417	0	10/25/1998	48825	5.1
NmSeg02	NM429	0	11/10/1998	48780	0.14 U
NmSeg02	NM430	0	11/10/1998	48781	5.3
NmSeg02	NM431	0	11/10/1998	48782	20.3
NmSeg02	NM432	0	11/10/1998	48783	14.9
NmSeg02	NM433	0	11/10/1998	48784	8.8
NmSeg02	NM461	0	11/10/1998	48858	24.4
NmSeg02	NM462	0	11/10/1998	48859	5.1
NmSeg04	NM441	15	11/5/1998	48786	0.68 U
NmSeg04	NM442	5	11/4/1998	48850	29.4
NmSeg04	NM442	15	11/4/1998	48851	0.67 U
NmSeg04	NM453	0	11/10/1998	48785	7
NmSeg04	NM454	0	11/10/1998	48854	11.4
NmSeg04	NM455	0	11/10/1998	48855	26.9
NmSeg04	NM456	0	11/10/1998	48856	4.8
NmSeg04	NM457	0	11/10/1998	48857	2.6
NmSeg04	NM459	10	11/12/1998	49058	0.2 U
NmSeg04	NM459	25	11/12/1998	49057	0.2 U
NmSeg04	NM460	5	11/4/1998	48848	0.67 U
NmSeg04	NM460	10	11/4/1998	48849	0.73 U
Zinc					
CCSeg02	CC402	5	10/27/1998	48839	3220
CCSeg02	CC402	10	10/27/1998	48840	507
CCSeg02	CC402	25	10/27/1998	48841	59.3
CCSeg04	CC403	10	10/27/1998	48731	684
CCSeg04	CC403	20	10/27/1998	48732	38
CCSeg04	CC405	0	11/10/1998	48770	7180
CCSeg04	CC406	0	11/10/1998	48771	2680

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Zinc (Continued)					
CCSeg04	CC407	0	11/10/1998	48772	591
CCSeg04	CC408	0	11/10/1998	48773	4340
CCSeg04	CC409	15	10/27/1998	48746	104
CCSeg04	CC414	15	10/28/1998	48892	121
CCSeg04	CC414	20	10/28/1998	48893	172
CCSeg04	CC415	5	10/27/1998	48835	1160
CCSeg04	CC415	10	10/27/1998	48836	30000
CCSeg04	CC415	15	10/27/1998	48837	325
CCSeg04	CC417	10	10/28/1998	48833	824
CCSeg04	CC418	10	10/28/1998	48894	513
CCSeg04	CC419	5	10/28/1998	48832	55400
CCSeg04	CC419	25	10/28/1998	48834	25.3
CCSeg04	CC422	10	10/29/1998	48895	393
CCSeg04	CC422	15	10/29/1998	48896	479
CCSeg04	CC426	0	10/25/1998	48826	251
CCSeg04	CC427	0	10/25/1998	48827	145
CCSeg04	CC428	0	10/25/1998	48828	245
CCSeg04	CC429	0	10/25/1998	48829	25800
CCSeg04	CC430	0	10/25/1998	48830	2870
CCSeg04	CC431	5	10/24/1998	48818	44.4
CCSeg04	CC431	45	10/24/1998	48819	40
CCSeg04	CC431	80	10/24/1998	48820	16.8
CCSeg04	CC432	15	10/26/1998	48842	325
CCSeg04	CC432	20	10/26/1998	48843	31.7
CCSeg04	CC433	5	11/6/1998	48790	558
CCSeg04	CC434	5	11/5/1998	48787	267
CCSeg04	CC434	10	11/5/1998	48788	64.3
CCSeg04	CC440	10	10/26/1998	48838	29.5
CCSeg04	CC441	20	11/6/1998	48752	43.6
CCSeg04	CC446	0	11/10/1998	48765	9300
CCSeg04	CC449	6	11/6/1998	48753	293
CCSeg04	CC449	20	11/6/1998	48754	68.3

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Zinc (Continued)					
CCSeg04	CC451	10	10/29/1998	48897	87.6
CCSeg04	CC451	25	10/29/1998	48898	28.2
CCSeg05	CC452	15	10/29/1998	48844	64
CCSeg05	CC452	35	10/29/1998	48845	68.7
CCSeg05	CC453	5	11/5/1998	48737	797
CCSeg05	CC456	5	11/5/1998	48735	440
CCSeg05	CC456	15	11/5/1998	48736	58.4
CCSeg05	CC459	10	11/16/1998	48759	212
CCSeg05	CC459	35	11/16/1998	48760	80.4
CCSeg05	CC460	5	11/18/1998	48761	263
CCSeg05	CC460	20	11/18/1998	48762	225
CCSeg05	CC462	5	11/13/1998	49056	141
CCSeg05	CC462	10	11/13/1998	49055	338
CCSeg05	CC463	10	11/7/1998	49048	792
CCSeg05	CC463	40	11/9/1998	49049	93.3
CCSeg05	CC464	20	11/11/1998	49054	272
CCSeg05	CC464	43	11/11/1998	49053	199
CCSeg05	CC465	5	11/10/1998	49051	405
CCSeg05	CC465	10	11/10/1998	49050	242
CCSeg05	CC467	6	11/9/1998	48758	181
CCSeg05	CC468	10	11/10/1998	48755	34.9
CCSeg05	CC469	10	11/9/1998	48756	61.9
CCSeg05	CC469	15	11/9/1998	48757	708
CCSeg05	CC470	0	11/10/1998	48793	3850
CCSeg05	CC471	0	11/10/1998	48794	208
CCSeg05	CC472	0	11/10/1998	48795	24300
CCSeg05	CC473	0	11/10/1998	48796	5320
CCSeg05	CC474	0	11/10/1998	48797	5330
CCSeg05	CC475	0	11/10/1998	48798	4060
CCSeg05	CC476	0	11/10/1998	48799	1330
CCSeg05	CC477	0	11/10/1998	48800	5380
CCSeg05	CC479	0	11/10/1998	48764	1030

Table C-1 (Continued)
Metals Concentrations in Sediments--Upper Basin

Segment	Location	Depth (ft)	Sample Date	Sample No.	Concentration (mg/kg)
Zinc (Continued)					
CCSeg05	CC480	5	11/4/1998	48734	1290
CCSeg05	CC481	5	11/17/1998	49351	593
CCSeg05	CC481	12	11/17/1998	49352	143
NmSeg02	NM413	0	10/25/1998	48821	2440
NmSeg02	NM414	0	10/25/1998	48822	2560
NmSeg02	NM415	0	10/25/1998	48823	5840
NmSeg02	NM416	0	10/25/1998	48824	5050
NmSeg02	NM417	0	10/25/1998	48825	1110
NmSeg02	NM429	0	11/10/1998	48780	109
NmSeg02	NM430	0	11/10/1998	48781	3160
NmSeg02	NM431	0	11/10/1998	48782	3980
NmSeg02	NM432	0	11/10/1998	48783	1090
NmSeg02	NM433	0	11/10/1998	48784	9300
NmSeg02	NM461	0	11/10/1998	48858	4120
NmSeg02	NM462	0	11/10/1998	48859	2970
NmSeg04	NM441	15	11/5/1998	48786	38.4
NmSeg04	NM442	5	11/4/1998	48850	4800
NmSeg04	NM442	15	11/4/1998	48851	74.4
NmSeg04	NM453	0	11/10/1998	48785	1030
NmSeg04	NM454	0	11/10/1998	48854	4030
NmSeg04	NM455	0	11/10/1998	48855	5770
NmSeg04	NM456	0	11/10/1998	48856	1570
NmSeg04	NM457	0	11/10/1998	48857	735
NmSeg04	NM459	10	11/12/1998	49058	66.6 J
NmSeg04	NM459	25	11/12/1998	49057	83.3 J
NmSeg04	NM460	5	11/4/1998	48848	467
NmSeg04	NM460	10	11/4/1998	48849	127

Table C-1 (Continued)
Metals Concentrations in Sediments—Upper Basin

Notes:

CC - Canyon Creek

ft - foot

J - estimated concentration

mg/kg - milligram per kilogram

NM - Ninemile Creek

U - not reported above the detection limit

UJ - not reported above the detection limit; detection limit estimated

Table C-2
Metals Concentrations in Sediments–Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Antimony						
LC101	CAT2	RV	0	2.8	44.9	D
LC103	CAT4	RV	4	6	30.2	D
LC103	CAT4	RV	12.9	14.6	4.27	D
LC103	CAT4	RV	11.2	12.9	129	D
LC103	CAT4	RV	9.6	11.2	47.9	D
LC103	CAT4	RV	8	9.6	39.7	D
LC103	CAT4	RV	6	8	39.2	D
LC103	CAT4	RV	2	4	31.2	D
LC103	CAT4	RV	0	2	29.2	D
LC102	CAT3	RV	19.9	22.5	60.8	D
LC102	CAT3	RV	17.2	19.9	48.8	D
LC102	CAT3	RV	14.6	17.2	57.8	D
LC102	CAT3	RV	12.1	14.6	50	D
LC102	CAT3	RV	9.7	12.1	49.5	D
LC102	CAT3	RV	7.2	9.7	49	D
LC104	CAT5	RV	3.7	7.4	30.2	D
LC101	CAT2	RV	2.8	4.9	28.6	D
LC101	CAT2	RV	4.9	6.1	31.1	D
LC102	CAT3	RV	0	2.4	40.7	D
LC102	CAT3	RV	4.8	7.2	40.3	D
LC102	CAT3	RV	2.4	4.8	28.6	D
LC102	CAT3	RV	22.5	23.4	47.1	D
LC101	CAT2	RV	6.1	15.5	40.5	D
LC152	MED4	RV	9.3	11.2	3.4	D
LC152	MED4	RV	1.9	5	87.8	D
LC152	MED4	RV	5	9.3	72.2	D
LC120	DS2	RV	0.8	6.7	2	D
LC120	DS2	RV	0	0.8	13.7	D
LC158	MN1	RV	0	2.9	37.5	D
LC158	MN1	RV	6.2	9.5	36.7	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Antimony (Continued)						
LC157	ML4	LK	0	3.6	12.3	D
LC156	ML3	LK	0	3.8	36	D
LC155	ML2	LK	0.9	6	41.5	D
LC155	ML2	LK	0.9	6	40.2	D
LC155	ML2	LK	0	0.9	26.7	D
LC121	DS3	RV	0	0.7	2.5	D
LC139	KN1	RV	0.9	2.3	30.2	D
LC154	ML1	LK	6.7	12.2	84.5	D
LC154	ML1	LK	2.4	6.7	38.7	D
LC154	ML1	LK	0	2.4	26.4	D
LC153	MED5	RV	6.9	11	0.879	D
LC153	MED5	RV	3.5	6.9	0.966	D
LC152	MED4	RV	0	1.9	40.8	D
LC121	DS3	RV	0.7	2.9	2.3	D
LC123	DS5	RV	0	1.3	3.9	D
LC123	DS5	RV	1.3	2.7	2.5	D
LC122	DS4	RV	0.7	2.1	2.3	D
LC122	DS4	RV	0	0.7	5.8	D
LC127	HAR4	RV	6.7	8.9	122	D
LC127	HAR4	RV	3.9	6.7	31.7	D
LC127	HAR4	RV	0	3.9	32.2	D
LC126	HAR3	RV	2.3	4.5	24.8	D
LC126	HAR3	RV	0	2.3	21.2	D
LC126	HAR3	RV	4.5	10.3	49.6	D
LC125	HAR2	RV	7.9	10	51.9	D
LC125	HAR2	RV	5.9	7.9	82.4	D
LC125	HAR2	RV	3.3	5.9	49.4	D
LC125	HAR2	RV	0	3.3	39.1	D
LC124	HAR1	RV	0	5.4	69.3	D
LC124	HAR1	RV	10.5	13	9.67	D
LC124	HAR1	RV	8.4	10.5	36.2	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Antimony (Continued)						
LC124	HAR1	RV	5.4	8.4	16.4	D
LC104	CAT5	RV	0	3.7	28.8	D
LC106	CL2	LK	2.3	3.3	34.8	D
LC107	CL3	LK	0	8.5	2.75	D
LC106	CL2	LK	0	2.3	27.8	D
LC116	CS3	RV	0	2.7	26.5	D
LC115	CS2	RV	3	6	38.1	D
LC115	CS2	RV	6	10	6.15	D
LC115	CS2	RV	0	3	23.9	D
LC114	CS1	RV	3	5	35.4	D
LC114	CS1	RV	0	3	21.5	D
LC114	CS1	RV	5	9	58.6	D
LC112	CN4	RV	0.8	2.7	29.8	D
LC116	CS3	RV	2.7	5.5	28.2	D
LC111	CN3	RV	0	3.3	46.3	D
LC110	CN2	RV	8.9	13.3	40.3	D
LC110	CN2	RV	4.4	8.9	27.4	D
LC110	CN2	RV	0	4.4	31.7	D
LC109	CN1	RV	8.5	12.8	2.56	D
LC109	CN1	RV	3.2	8.5	30.9	D
LC109	CN1	RV	0	3.2	21.4	D
LC108	CL4	LK	0	3	2	D
LC112	CN4	RV	0	0.8	25.1	D
LC111	CN3	RV	5	6.6	38.7	D
LC111	CN3	RV	3.3	5	31.4	D
LC107	CL3	LK	0	8.5	5.7	D
LC105	CL1	LK	0	6.7	14.4	D
LC116	CS3	RV	5.5	9.1	36.6	D
LC117	CS5	RV	0	1.9	8.84	D
LC182	SWN3	RV	1.8	3.4	41.8	D
LC182	SWN3	RV	0	1.8	37.3	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Antimony (Continued)						
LC182	SWN3	RV	9.5	12.5	0.957	D
LC182	SWN3	RV	7.6	9.5	67.3	D
LC182	SWN3	RV	4.8	7.6	46.8	D
LC182	SWN3	RV	3.4	4.8	47.3	D
LC181	SWN2	RV	11.1	13	20.7	D
LC181	SWN2	RV	9.1	11.1	48.3	D
LC183	SWN4	RV	5.2	8.3	38.4	D
LC183	SWN4	RV	2.7	5.2	37.9	D
LC183	SWN4	RV	0	2.7	26.3	D
LC181	SWN2	RV	7.6	9.1	33.6	D
LC181	SWN2	RV	0	4.7	36.4	D
LC183	SWN4	RV	11.3	13.8	54.4	D
LC183	SWN4	RV	8.3	11.3	48.4	D
LC181	SWN2	RV	4.7	7.6	45.4	D
LC180	SWN1	RV	0	3	9.18	D
LC180	SWN1	RV	3	5.3	2.69	D
LC183	SWN4	RV	13.8	19.8	4.13	D
LC184	SWN5	RV	0	1.8	133	D
LC184	SWN5	RV	1.8	8	22.8	D
LC164	MS2	RV	0	1.2	27	D
LC163	MS1	RV	1.2	3.6	2.3	D
LC163	MS1	RV	0	1.2	22.3	D
LC162	MN5	RV	2.2	5.9	2.5	D
LC162	MN5	RV	0	2.2	2	D
LC161	MN4	RV	0	2.8	1.8	D
LC160	MN3	RV	0	0.7	39.6	D
LC179	SS5	RV	0	1.1	14.7	D
LC165	MS3	RV	0	0.5	31	D
LC140	KN2	RV	1.8	3.9	1.7	D
LC141	KN3	RV	0	1.3	31.6	D
LC145	KS2	RV	2.7	5.5	1.5	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Antimony (Continued)						
LC145	KS2	RV	0	2.7	5.24	D
LC149	MED1	RV	7.8	10.8	33.5	D
LC149	MED1	RV	2.7	7.8	56.2	D
LC149	MED1	RV	0	2.7	39.4	D
LC149	MED1	RV	16.4	20.4	1.4	D
LC148	KS5	RV	1	2.8	2.5	D
LC148	KS5	RV	0	1	2.4	D
LC147	KS4	RV	1.2	2.5	1.3	D
LC147	KS4	RV	0	1.2	6.8	D
LC150	MED2	RV	0	2.8	36.4	D
LC149	MED1	RV	10.8	12.4	3.13	D
LC146	KS3	RV	0	1.6	4.9	D
LC144	KS1	RV	2.8	8.8	1.5	D
LC144	KS1	RV	0	2.8	44.4	D
LC143	KN5	RV	0	0.6	27.6	D
LC142	KN4	RV	0.9	1.8	15.1	D
LC142	KN4	RV	0	0.9	33.7	D
LC150	MED2	RV	5.6	8	30.5	D
LC150	MED2	RV	2.8	5.6	35.4	D
LC140	KN2	RV	3.9	9.3	1.14	D
LC117	CS5	RV	3.7	6	1.12	D
LC118	DEL1	RV	0	3.8	16.8	D
LC118	DEL1	RV	12.5	15.6	33.1	D
LC118	DEL1	RV	15.6	18.8	64	D
LC118	DEL1	RV	7.6	12.5	31.8	D
LC118	DEL1	RV	3.8	7.6	21.5	D
LC129	HN1	RV	0	2.8	27.5	D
LC130	HN2	RV	0	0.8	34.5	D
LC129	HN1	RV	2.8	4.9	31.4	D
LC135	KL1	LK	7.6	11	33.5	D
LC135	KL1	LK	4.1	7.6	37.1	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Antimony (Continued)						
LC135	KL1	LK	0	4.1	28	D
LC119	DS1	RV	1.9	5.7	2.2	D
LC119	DS1	RV	1.9	5.7	1.8	D
LC119	DS1	RV	0	1.9	16.7	D
LC134	HS4	RV	5.9	9.3	0.868	D
LC134	HS4	RV	0	1.7	14.7	D
LC133	HS3	RV	1.9	5.7	0.77	D
LC133	HS3	RV	0	1.9	2.2	D
LC136	KL2	LK	3.7	7.1	47.3	D
LC136	KL2	LK	0	3.7	29.9	D
LC132	HS2	RV	0	1.6	15	D
LC131	HS1	RV	0	5	10.1	D
LC131	HS1	RV	0	5	9.99	D
LC130	HN2	RV	0.8	4.1	50.4	D
LC169	RL2	LK	4.4	10.9	2.7	D
LC140	KN2	RV	0	1.8	32.6	D
LC178	SS4	RV	0	0.9	5.87	D
LC177	SS3	RV	0	0.8	10.9	D
LC176	SS2	RV	2.2	5.8	1.81	D
LC176	SS2	RV	0	2.2	38	D
LC175	SS1	RV	0	1.4	34	D
LC159	MN2	RV	1.4	2.9	31.4	D
LC173	SN2	RV	0	1.9	7.2	D
LC171	RL4	LK	8.5	10.2	4.3	D
LC172	SN1	RV	0	1.7	10	D
LC159	MN2	RV	0	1.4	46.3	D
LC174	SN3	RV	3.5	6.7	11.4	D
LC137	KL3	LK	0	4	20.1	D
LC138	KL4	LK	5.1	9.7	9.66	D
LC100	CAT1	RV	2.2	5.4	47.8	D
LC100	CAT1	RV	14.1	17.7	1.7	D

Table C-2 (Continued)
Metals Concentrations in Sediments-Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Antimony (Continued)						
LC100	CAT1	RV	5.4	14.1	51.1	D
LC100	CAT1	RV	0	2.2	22	D
LC150	MED2	RV	8	11.8	45.2	D
LC150	MED2	RV	11.8	15.2	11	D
LC151	MED3	RV	5.7	9.2	47.7	D
LC151	MED3	RV	14.4	20.4	1.66	D
LC151	MED3	RV	11.2	14.4	6.88	D
LC151	MED3	RV	9.2	11.2	102	D
LC151	MED3	RV	2.6	5.7	35.4	D
LC151	MED3	RV	0	2.6	29.5	D
LC150	MED2	RV	15.2	21.2	1.1	D
LC136	KL2	LK	7.1	10.3	3.24	ND
LC138	KL4	LK	0	5.1	3.01	ND
LC100	CAT1	RV	17.7	19.5	1	ND
LC137	KL3	LK	4	10.4	3.75	ND
LC137	KL3	LK	4	10.4	3.79	ND
LC169	RL2	LK	0	4.4	7.3	ND
LC170	RL3	LK	0	2.5	7.12	ND
LC169	RL2	LK	4.4	10.9	2.5	ND
LC178	SS4	RV	0.9	3.5	2.84	ND
LC177	SS3	RV	0.8	4.5	1.08	ND
LC175	SS1	RV	7.4	8.9	1.01	ND
LC175	SS1	RV	1.4	7.4	1.06	ND
LC159	MN2	RV	2.9	10.3	1.2	ND
LC174	SN3	RV	0	3.5	1.3	ND
LC173	SN2	RV	1.9	9.5	0.888	ND
LC172	SN1	RV	5.6	9.9	0.981	ND
LC172	SN1	RV	1.7	5.6	0.729	ND
LC171	RL4	LK	3.5	8.5	2.2	ND
LC171	RL4	LK	0	3.5	5.5	ND
LC170	RL3	LK	2.5	10.7	3.58	ND

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Antimony (Continued)						
LC128	HAR5	RV	0	2.5	1.33	ND
LC128	HAR5	RV	6.4	10.5	1.08	ND
LC128	HAR5	RV	10.5	14.1	0.843	ND
LC128	HAR5	RV	2.5	6.4	1.33	ND
LC134	HS4	RV	1.7	5.9	0.753	ND
LC133	HS3	RV	5.7	9.5	0.842	ND
LC132	HS2	RV	5.4	9.5	0.79	ND
LC132	HS2	RV	1.6	5.4	0.761	ND
LC131	HS1	RV	5	10.2	1.09	ND
LC117	CS5	RV	1.9	3.7	0.953	ND
LC118	DEL1	RV	18.8	24.4	1.16	ND
LC140	KN2	RV	3.9	9.3	1.9	ND
LC149	MED1	RV	12.4	16.4	1.14	ND
LC146	KS3	RV	1.6	3.3	0.996	ND
LC143	KN5	RV	1.4	3.6	1.29	ND
LC143	KN5	RV	0.6	1.4	1.57	ND
LC142	KN4	RV	1.8	3.5	1.1	ND
LC141	KN3	RV	1.3	3.1	1.12	ND
LC141	KN3	RV	3.1	5.1	1.6	ND
LC184	SWN5	RV	8	10.8	1.13	ND
LC161	MN4	RV	2.8	8.2	1.4	ND
LC160	MN3	RV	2.4	8.6	1.6	ND
LC160	MN3	RV	0.7	2.4	2.8	ND
LC166	MS4	RV	0	3	1.03	ND
LC167	MS5	RV	0	1.6	1.05	ND
LC167	MS5	RV	1.6	4.8	1.09	ND
LC167	MS5	RV	1.6	4.8	1.12	ND
LC168	RL1	LK	2.6	10.3	6.64	ND
LC168	RL1	LK	0	2.6	6.99	ND
LC166	MS4	RV	3	4.4	1.17	ND
LC165	MS3	RV	0.5	2.1	1.08	ND

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Antimony (Continued)						
LC164	MS2	RV	1.2	3.7	1	ND
LC163	MS1	RV	3.6	9.5	0.763	ND
LC179	SS5	RV	1.1	4.2	1.52	ND
LC184	SWN5	RV	10.8	13.4	1.09	ND
LC181	SWN2	RV	13	16.3	0.728	ND
LC180	SWN1	RV	12.9	17.5	0.782	ND
LC180	SWN1	RV	9.6	12.9	0.728	ND
LC180	SWN1	RV	7.8	9.6	0.899	ND
LC180	SWN1	RV	5.3	7.8	0.893	ND
LC105	CL1	LK	6.7	10.3	0.971	ND
LC113	CN5	RV	1.8	3.4	2.04	ND
LC113	CN5	RV	0.5	1.8	1.33	ND
LC112	CN4	RV	2.7	9.1	2.54	ND
LC124	HAR1	RV	13	15.7	1.08	ND
LC126	HAR3	RV	14.6	17.2	0.937	ND
LC127	HAR4	RV	15.7	20.2	1.26	ND
LC126	HAR3	RV	17.2	20.5	0.906	ND
LC127	HAR4	RV	11.5	15.7	1.49	ND
LC127	HAR4	RV	8.9	11.5	1.23	ND
LC126	HAR3	RV	10.3	14.6	0.843	ND
LC125	HAR2	RV	16.4	20.6	0.901	ND
LC124	HAR1	RV	15.7	20.7	1.02	ND
LC125	HAR2	RV	10	16.4	0.911	ND
LC152	MED4	RV	11.2	13.6	0.806	ND
LC158	MN1	RV	2.9	6.2	1.5	ND
LC157	ML4	LK	3.6	8.9	2.1	ND
LC156	ML3	LK	3.8	7.5	2.48	ND
LC153	MED5	RV	11	14.5	0.805	ND
LC153	MED5	RV	0	3.5	0.806	ND
LC152	MED4	RV	13.6	16.2	0.85	ND
LC139	KN1	RV	3.4	6	1.5	ND

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Antimony (Continued)						
LC139	KN1	RV	2.3	3.4	2.3	ND
LC103	CAT4	RV	14.6	17.1	1.02	ND
LC103	CAT4	RV	17.1	19.2	0.937	ND
LC104	CAT5	RV	11	15	1.15	ND
LC104	CAT5	RV	7.4	11	0.86	ND
Arsenic						
LC100	CAT1	RV	5.4	14.1	266	D
LC100	CAT1	RV	17.7	19.5	2.6	D
LC100	CAT1	RV	14.1	17.7	9.1	D
LC100	CAT1	RV	0	2.2	119	D
LC100	CAT1	RV	2.2	5.4	239	D
LC101	CAT2	RV	0	2.8	140	D
LC101	CAT2	RV	2.8	4.9	119	D
LC101	CAT2	RV	6.1	15.5	106	D
LC101	CAT2	RV	4.9	6.1	148	D
LC102	CAT3	RV	19.9	22.5	311	D
LC102	CAT3	RV	17.2	19.9	262	D
LC102	CAT3	RV	14.6	17.2	322	D
LC102	CAT3	RV	12.1	14.6	283	D
LC102	CAT3	RV	9.7	12.1	204	D
LC102	CAT3	RV	7.2	9.7	152	D
LC102	CAT3	RV	4.8	7.2	161	D
LC102	CAT3	RV	2.4	4.8	92.4	D
LC102	CAT3	RV	0	2.4	137	D
LC102	CAT3	RV	22.5	23.4	228	D
LC103	CAT4	RV	17.1	19.2	2.94	D
LC103	CAT4	RV	14.6	17.1	3.03	D
LC103	CAT4	RV	12.9	14.6	26.5	D
LC103	CAT4	RV	11.2	12.9	483	D
LC103	CAT4	RV	9.6	11.2	478	D
LC103	CAT4	RV	8	9.6	277	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Arsenic (Continued)						
LC103	CAT4	RV	6	8	187	D
LC103	CAT4	RV	4	6	195	D
LC103	CAT4	RV	2	4	131	D
LC103	CAT4	RV	0	2	130	D
LC104	CAT5	RV	7.4	11	5.41	D
LC104	CAT5	RV	3.7	7.4	378	D
LC104	CAT5	RV	0	3.7	223	D
LC104	CAT5	RV	11	15	4.04	D
LC105	CL1	LK	0	6.7	41.8	D
LC105	CL1	LK	6.7	10.3	3.25	D
LC106	CL2	LK	0	2.3	62.4	D
LC106	CL2	LK	2.3	3.3	24.8	D
LC107	CL3	LK	0	8.5	12.2	D
LC107	CL3	LK	0	8.5	13.2	D
LC108	CL4	LK	0	3	5.6	D
LC109	CN1	RV	8.5	12.8	10.6	D
LC109	CN1	RV	3.2	8.5	126	D
LC109	CN1	RV	0	3.2	143	D
LC110	CN2	RV	8.9	13.3	193	D
LC110	CN2	RV	4.4	8.9	153	D
LC110	CN2	RV	0	4.4	189	D
LC111	CN3	RV	5	6.6	306	D
LC111	CN3	RV	3.3	5	374	D
LC111	CN3	RV	0	3.3	446	D
LC112	CN4	RV	2.7	9.1	14.9	D
LC112	CN4	RV	0.8	2.7	141	D
LC112	CN4	RV	0	0.8	247	D
LC113	CN5	RV	1.8	3.4	5.34	D
LC113	CN5	RV	0.5	1.8	2.9	D
LC114	CS1	RV	3	5	464	D
LC114	CS1	RV	0	3	106	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Arsenic (Continued)						
LC114	CS1	RV	5	9	414	D
LC115	CS2	RV	0	3	194	D
LC115	CS2	RV	3	6	294	D
LC115	CS2	RV	6	10	10.2	D
LC116	CS3	RV	0	2.7	160	D
LC116	CS3	RV	5.5	9.1	116	D
LC116	CS3	RV	2.7	5.5	91.8	D
LC117	CS5	RV	0	1.9	56.9	D
LC117	CS5	RV	1.9	3.7	6.19	D
LC117	CS5	RV	3.7	6	7.85	D
LC118	DEL1	RV	0	3.8	96.6	D
LC118	DEL1	RV	3.8	7.6	106	D
LC118	DEL1	RV	18.8	24.4	4.76	D
LC118	DEL1	RV	15.6	18.8	58.5	D
LC118	DEL1	RV	7.6	12.5	139	D
LC118	DEL1	RV	12.5	15.6	133	D
LC119	DS1	RV	1.9	5.7	6.7	D
LC119	DS1	RV	1.9	5.7	7.6	D
LC119	DS1	RV	0	1.9	80.6	D
LC120	DS2	RV	0.8	6.7	7.1	D
LC120	DS2	RV	0	0.8	80.2	D
LC121	DS3	RV	0.7	2.9	7.7	D
LC121	DS3	RV	0	0.7	9.1	D
LC122	DS4	RV	0	0.7	16.1	D
LC122	DS4	RV	0.7	2.1	10.2	D
LC123	DS5	RV	0	1.3	8	D
LC123	DS5	RV	1.3	2.7	6	D
LC124	HAR1	RV	15.7	20.7	1.75	D
LC124	HAR1	RV	13	15.7	2.38	D
LC124	HAR1	RV	10.5	13	12.4	D
LC124	HAR1	RV	0	5.4	113	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Arsenic (Continued)						
LC124	HAR1	RV	5.4	8.4	33.1	D
LC124	HAR1	RV	8.4	10.5	26.1	D
LC125	HAR2	RV	16.4	20.6	9.13	D
LC125	HAR2	RV	10	16.4	8.45	D
LC125	HAR2	RV	7.9	10	35.4	D
LC125	HAR2	RV	5.9	7.9	58.2	D
LC125	HAR2	RV	3.3	5.9	107	D
LC125	HAR2	RV	0	3.3	181	D
LC126	HAR3	RV	17.2	20.5	9.68	D
LC126	HAR3	RV	14.6	17.2	8.75	D
LC126	HAR3	RV	0	2.3	117	D
LC126	HAR3	RV	4.5	10.3	66.3	D
LC126	HAR3	RV	10.3	14.6	6.88	D
LC126	HAR3	RV	2.3	4.5	88.2	D
LC127	HAR4	RV	3.9	6.7	108	D
LC127	HAR4	RV	0	3.9	184	D
LC127	HAR4	RV	15.7	20.2	6.86	D
LC127	HAR4	RV	11.5	15.7	6.09	D
LC127	HAR4	RV	8.9	11.5	6.21	D
LC127	HAR4	RV	6.7	8.9	67.9	D
LC128	HAR5	RV	0	2.5	6.82	D
LC128	HAR5	RV	6.4	10.5	4.36	D
LC128	HAR5	RV	2.5	6.4	5.2	D
LC128	HAR5	RV	10.5	14.1	7.55	D
LC129	HN1	RV	0	2.8	105	D
LC129	HN1	RV	2.8	4.9	266	D
LC130	HN2	RV	0.8	4.1	209	D
LC130	HN2	RV	0	0.8	161	D
LC131	HS1	RV	0	5	36.6	D
LC131	HS1	RV	5	10.2	8.07	D
LC131	HS1	RV	0	5	36	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Arsenic (Continued)						
LC132	HS2	RV	5.4	9.5	6.08	D
LC132	HS2	RV	1.6	5.4	5.48	D
LC132	HS2	RV	0	1.6	66.8	D
LC133	HS3	RV	5.7	9.5	6.27	D
LC133	HS3	RV	1.9	5.7	11.7	D
LC133	HS3	RV	0	1.9	15.4	D
LC134	HS4	RV	5.9	9.3	5.3	D
LC134	HS4	RV	1.7	5.9	2.39	D
LC134	HS4	RV	0	1.7	20.7	D
LC135	KL1	LK	7.6	11	211	D
LC135	KL1	LK	4.1	7.6	173	D
LC135	KL1	LK	0	4.1	91.9	D
LC136	KL2	LK	7.1	10.3	19.7	D
LC136	KL2	LK	3.7	7.1	66.7	D
LC136	KL2	LK	0	3.7	158	D
LC137	KL3	LK	0	4	159	D
LC137	KL3	LK	4	10.4	25.4	D
LC137	KL3	LK	4	10.4	29	D
LC138	KL4	LK	0	5.1	17.1	D
LC138	KL4	LK	5.1	9.7	79.3	D
LC139	KN1	RV	3.4	6	6.3	D
LC139	KN1	RV	2.3	3.4	8.1	D
LC139	KN1	RV	0.9	2.3	141	D
LC140	KN2	RV	3.9	9.3	7	D
LC140	KN2	RV	0	1.8	159	D
LC140	KN2	RV	1.8	3.9	6.1	D
LC140	KN2	RV	3.9	9.3	15.3	D
LC141	KN3	RV	1.3	3.1	5.23	D
LC141	KN3	RV	3.1	5.1	4.3	D
LC141	KN3	RV	0	1.3	160	D
LC142	KN4	RV	1.8	3.5	5.36	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Arsenic (Continued)						
LC142	KN4	RV	0.9	1.8	44.5	D
LC142	KN4	RV	0	0.9	402	D
LC143	KN5	RV	0	0.6	53.1	D
LC143	KN5	RV	1.4	3.6	11.5	D
LC143	KN5	RV	0.6	1.4	14.5	D
LC144	KS1	RV	2.8	8.8	6.4	D
LC144	KS1	RV	0	2.8	63.9	D
LC145	KS2	RV	2.7	5.5	4.88	D
LC145	KS2	RV	0	2.7	22.9	D
LC146	KS3	RV	1.6	3.3	5.33	D
LC146	KS3	RV	0	1.6	11.9	D
LC147	KS4	RV	1.2	2.5	5.5	D
LC147	KS4	RV	0	1.2	11.1	D
LC148	KS5	RV	0	1	5.3	D
LC148	KS5	RV	1	2.8	2.5	ND
LC149	MED1	RV	16.4	20.4	3.55	D
LC149	MED1	RV	12.4	16.4	5.72	D
LC149	MED1	RV	10.8	12.4	4.77	D
LC149	MED1	RV	7.8	10.8	19.6	D
LC149	MED1	RV	2.7	7.8	105	D
LC149	MED1	RV	0	2.7	129	D
LC150	MED2	RV	5.6	8	128	D
LC150	MED2	RV	2.8	5.6	140	D
LC150	MED2	RV	0	2.8	152	D
LC150	MED2	RV	8	11.8	51.4	D
LC150	MED2	RV	11.8	15.2	12.8	D
LC150	MED2	RV	15.2	21.2	4.55	D
LC151	MED3	RV	14.4	20.4	8.73	D
LC151	MED3	RV	11.2	14.4	6.51	D
LC151	MED3	RV	9.2	11.2	51.3	D
LC151	MED3	RV	5.7	9.2	97.2	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Arsenic (Continued)						
LC151	MED3	RV	2.6	5.7	148	D
LC151	MED3	RV	0	2.6	84.4	D
LC152	MED4	RV	9.3	11.2	12.4	D
LC152	MED4	RV	13.6	16.2	6.99	D
LC152	MED4	RV	5	9.3	54.1	D
LC152	MED4	RV	11.2	13.6	9.82	D
LC152	MED4	RV	1.9	5	87.6	D
LC152	MED4	RV	0	1.9	266	D
LC153	MED5	RV	3.5	6.9	12.5	D
LC153	MED5	RV	0	3.5	9.24	D
LC153	MED5	RV	6.9	11	9.08	D
LC153	MED5	RV	11	14.5	6.2	D
LC154	ML1	LK	6.7	12.2	62.3	D
LC154	ML1	LK	2.4	6.7	319	D
LC154	ML1	LK	0	2.4	212	D
LC155	ML2	LK	0.9	6	249	D
LC155	ML2	LK	0.9	6	270	D
LC155	ML2	LK	0	0.9	174	D
LC156	ML3	LK	3.8	7.5	11.3	D
LC156	ML3	LK	0	3.8	97.6	D
LC157	ML4	LK	3.6	8.9	10.9	D
LC157	ML4	LK	0	3.6	82	D
LC158	MN1	RV	2.9	6.2	7	D
LC158	MN1	RV	0	2.9	351	D
LC158	MN1	RV	6.2	9.5	336	D
LC159	MN2	RV	2.9	10.3	4.2	D
LC159	MN2	RV	1.4	2.9	114	D
LC159	MN2	RV	0	1.4	500	D
LC160	MN3	RV	2.4	8.6	8.4	D
LC160	MN3	RV	0.7	2.4	9.9	D
LC160	MN3	RV	0	0.7	101	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Arsenic (Continued)						
LC161	MN4	RV	2.8	8.2	5.8	D
LC161	MN4	RV	0	2.8	3.9	D
LC162	MN5	RV	2.2	5.9	4.3	D
LC162	MN5	RV	0	2.2	5	D
LC163	MS1	RV	3.6	9.5	5.11	D
LC163	MS1	RV	1.2	3.6	9.44	D
LC163	MS1	RV	0	1.2	79.7	D
LC164	MS2	RV	1.2	3.7	4.1	D
LC164	MS2	RV	0	1.2	111	D
LC165	MS3	RV	0.5	2.1	6	D
LC165	MS3	RV	0	0.5	74	D
LC166	MS4	RV	3	4.4	3.2	D
LC166	MS4	RV	0	3	3.46	D
LC167	MS5	RV	1.6	4.8	3.74	D
LC167	MS5	RV	1.6	4.8	4.18	D
LC167	MS5	RV	0	1.6	4.62	D
LC168	RL1	LK	0	2.6	10.5	ND
LC168	RL1	LK	2.6	10.3	9.96	ND
LC169	RL2	LK	4.4	10.9	11.2	D
LC169	RL2	LK	0	4.4	19.2	D
LC169	RL2	LK	4.4	10.9	9.2	D
LC170	RL3	LK	2.5	10.7	13.4	D
LC170	RL3	LK	0	2.5	19.1	D
LC171	RL4	LK	3.5	8.5	5.2	D
LC171	RL4	LK	8.5	10.2	24.8	D
LC171	RL4	LK	0	3.5	10.9	D
LC172	SN1	RV	1.7	5.6	4.25	D
LC172	SN1	RV	0	1.7	47.7	D
LC172	SN1	RV	5.6	9.9	1.31	ND
LC173	SN2	RV	1.9	9.5	9.16	D
LC173	SN2	RV	0	1.9	26.9	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Arsenic (Continued)						
LC174	SN3	RV	3.5	6.7	6.78	D
LC174	SN3	RV	0	3.5	2.69	D
LC175	SS1	RV	1.4	7.4	10.7	D
LC175	SS1	RV	0	1.4	220	D
LC175	SS1	RV	7.4	8.9	5.02	D
LC176	SS2	RV	2.2	5.8	8.14	D
LC176	SS2	RV	0	2.2	183	D
LC177	SS3	RV	0	0.8	108	D
LC177	SS3	RV	0.8	4.5	8.04	D
LC178	SS4	RV	0.9	3.5	11.8	D
LC178	SS4	RV	0	0.9	23.2	D
LC179	SS5	RV	1.1	4.2	10.3	D
LC179	SS5	RV	0	1.1	35.3	D
LC180	SWN1	RV	0	3	20.1	D
LC180	SWN1	RV	12.9	17.5	8.62	D
LC180	SWN1	RV	9.6	12.9	5.35	D
LC180	SWN1	RV	7.8	9.6	6.89	D
LC180	SWN1	RV	5.3	7.8	6.86	D
LC180	SWN1	RV	3	5.3	13.9	D
LC181	SWN2	RV	13	16.3	3.58	D
LC181	SWN2	RV	11.1	13	26.4	D
LC181	SWN2	RV	9.1	11.1	123	D
LC181	SWN2	RV	7.6	9.1	129	D
LC181	SWN2	RV	0	4.7	113	D
LC181	SWN2	RV	4.7	7.6	223	D
LC182	SWN3	RV	1.8	3.4	169	D
LC182	SWN3	RV	3.4	4.8	276	D
LC182	SWN3	RV	0	1.8	120	D
LC182	SWN3	RV	4.8	7.6	264	D
LC182	SWN3	RV	9.5	12.5	3.38	D
LC182	SWN3	RV	7.6	9.5	72	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Arsenic (Continued)						
LC183	SWN4	RV	11.3	13.8	51.6	D
LC183	SWN4	RV	8.3	11.3	119	D
LC183	SWN4	RV	5.2	8.3	142	D
LC183	SWN4	RV	2.7	5.2	97.8	D
LC183	SWN4	RV	0	2.7	92.2	D
LC183	SWN4	RV	13.8	19.8	3.32	D
LC184	SWN5	RV	0	1.8	52.1	D
LC184	SWN5	RV	1.8	8	15.4	D
LC184	SWN5	RV	8	10.8	4.73	D
LC184	SWN5	RV	10.8	13.4	5.25	D
Cadmium						
LC100	CAT1	RV	0	2.2	15	D
LC100	CAT1	RV	2.2	5.4	24	D
LC100	CAT1	RV	5.4	14.1	29.7	D
LC151	MED3	RV	0	2.6	24.8	D
LC151	MED3	RV	9.2	11.2	114	D
LC151	MED3	RV	11.2	14.4	3.33	D
LC151	MED3	RV	2.6	5.7	36.5	D
LC151	MED3	RV	5.7	9.2	33.9	D
LC172	SN1	RV	0	1.7	17.3	D
LC159	MN2	RV	0	1.4	18.5	D
LC159	MN2	RV	2.9	10.3	0.91	D
LC175	SS1	RV	0	1.4	17	D
LC177	SS3	RV	0	0.8	6.18	D
LC178	SS4	RV	0.9	3.5	0.746	D
LC178	SS4	RV	0	0.9	5.48	D
LC141	KN3	RV	1.3	3.1	5.41	D
LC141	KN3	RV	0	1.3	24	D
LC140	KN2	RV	3.9	9.3	0.48	D
LC140	KN2	RV	1.8	3.9	2.9	D
LC140	KN2	RV	0	1.8	10.1	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Cadmium (Continued)						
LC176	SS2	RV	0	2.2	15.5	D
LC175	SS1	RV	1.4	7.4	0.361	D
LC174	SN3	RV	3.5	6.7	1.3	D
LC172	SN1	RV	1.7	5.6	1.12	D
LC173	SN2	RV	0	1.9	10.7	D
LC159	MN2	RV	1.4	2.9	17.7	D
LC128	HAR5	RV	10.5	14.1	0.337	D
LC129	HN1	RV	0	2.8	24.7	D
LC129	HN1	RV	2.8	4.9	25.4	D
LC130	HN2	RV	0	0.8	15.9	D
LC130	HN2	RV	0.8	4.1	35.8	D
LC131	HS1	RV	0	5	7.84	D
LC134	HS4	RV	1.7	5.9	0.452	D
LC134	HS4	RV	0	1.7	12.6	D
LC133	HS3	RV	5.7	9.5	0.317	D
LC133	HS3	RV	0	1.9	1.83	D
LC132	HS2	RV	5.4	9.5	0.284	D
LC132	HS2	RV	0	1.6	16	D
LC131	HS1	RV	0	5	7.97	D
LC131	HS1	RV	5	10.2	1.41	D
LC137	KL3	LK	4	10.4	1.29	D
LC137	KL3	LK	4	10.4	1.46	D
LC137	KL3	LK	0	4	24.7	D
LC136	KL2	LK	3.7	7.1	55.8	D
LC136	KL2	LK	0	3.7	32.4	D
LC135	KL1	LK	7.6	11	28.6	D
LC135	KL1	LK	4.1	7.6	30.9	D
LC135	KL1	LK	0	4.1	36.6	D
LC119	DS1	RV	1.9	5.7	3.5	D
LC138	KL4	LK	5.1	9.7	39.2	D
LC119	DS1	RV	1.9	5.7	11	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Cadmium (Continued)						
LC119	DS1	RV	0	1.9	7.6	D
LC118	DEL1	RV	12.5	15.6	21.3	D
LC118	DEL1	RV	15.6	18.8	72.1	D
LC142	KN4	RV	0	0.9	18.9	D
LC150	MED2	RV	11.8	15.2	19.2	D
LC150	MED2	RV	8	11.8	71.2	D
LC150	MED2	RV	5.6	8	29	D
LC150	MED2	RV	2.8	5.6	37.8	D
LC150	MED2	RV	0	2.8	33.4	D
LC149	MED1	RV	10.8	12.4	1.24	D
LC149	MED1	RV	7.8	10.8	26.1	D
LC149	MED1	RV	2.7	7.8	60.9	D
LC149	MED1	RV	0	2.7	27.6	D
LC147	KS4	RV	0	1.2	6.3	D
LC146	KS3	RV	0	1.6	3.4	D
LC142	KN4	RV	0.9	1.8	19.9	D
LC142	KN4	RV	1.8	3.5	3.64	D
LC144	KS1	RV	0	2.8	5.4	D
LC145	KS2	RV	0	2.7	16.1	D
LC144	KS1	RV	2.8	8.8	0.69	D
LC143	KN5	RV	0	0.6	12.9	D
LC143	KN5	RV	0.6	1.4	2.97	D
LC108	CL4	LK	0	3	0.46	D
LC109	CN1	RV	0	3.2	10.5	D
LC109	CN1	RV	3.2	8.5	14.5	D
LC109	CN1	RV	8.5	12.8	4.37	D
LC110	CN2	RV	0	4.4	7.73	D
LC110	CN2	RV	4.4	8.9	12.7	D
LC114	CS1	RV	3	5	19.8	D
LC114	CS1	RV	0	3	15.3	D
LC114	CS1	RV	5	9	15.4	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Cadmium (Continued)						
LC112	CN4	RV	2.7	9.1	0.966	D
LC112	CN4	RV	0.8	2.7	33.2	D
LC112	CN4	RV	0	0.8	7.75	D
LC111	CN3	RV	5	6.6	13.1	D
LC111	CN3	RV	3.3	5	11.7	D
LC118	DEL1	RV	7.6	12.5	40.4	D
LC118	DEL1	RV	3.8	7.6	32.8	D
LC117	CS5	RV	0	1.9	8.78	D
LC116	CS3	RV	5.5	9.1	158	D
LC116	CS3	RV	2.7	5.5	16.4	D
LC116	CS3	RV	0	2.7	15.7	D
LC115	CS2	RV	6	10	12.1	D
LC115	CS2	RV	3	6	25.5	D
LC115	CS2	RV	0	3	18.4	D
LC111	CN3	RV	0	3.3	22.1	D
LC118	DEL1	RV	0	3.8	25.9	D
LC110	CN2	RV	8.9	13.3	22.6	D
LC180	SWN1	RV	0	3	7.8	D
LC181	SWN2	RV	4.7	7.6	31.2	D
LC181	SWN2	RV	0	4.7	25.3	D
LC184	SWN5	RV	0	1.8	62.2	D
LC183	SWN4	RV	13.8	19.8	2.3	D
LC184	SWN5	RV	1.8	8	11.8	D
LC183	SWN4	RV	11.3	13.8	70.6	D
LC183	SWN4	RV	8.3	11.3	35.2	D
LC183	SWN4	RV	5.2	8.3	28.1	D
LC183	SWN4	RV	2.7	5.2	24	D
LC183	SWN4	RV	0	2.7	23.1	D
LC182	SWN3	RV	1.8	3.4	27.1	D
LC182	SWN3	RV	0	1.8	24.3	D
LC182	SWN3	RV	7.6	9.5	63.8	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Cadmium (Continued)						
LC182	SWN3	RV	4.8	7.6	30.8	D
LC182	SWN3	RV	3.4	4.8	28	D
LC181	SWN2	RV	11.1	13	20.4	D
LC181	SWN2	RV	9.1	11.1	46.8	D
LC181	SWN2	RV	7.6	9.1	29.7	D
LC180	SWN1	RV	12.9	17.5	0.329	D
LC180	SWN1	RV	3	5.3	2.23	D
LC180	SWN1	RV	5.3	7.8	0.508	D
LC180	SWN1	RV	7.8	9.6	0.351	D
LC179	SS5	RV	0	1.1	6.75	D
LC165	MS3	RV	0	0.5	10.1	D
LC164	MS2	RV	1.2	3.7	0.39	D
LC169	RL2	LK	0	4.4	2.4	D
LC167	MS5	RV	0	1.6	0.395	D
LC164	MS2	RV	0	1.2	12.1	D
LC163	MS1	RV	1.2	3.6	2.45	D
LC160	MN3	RV	0	0.7	16.4	D
LC163	MS1	RV	0	1.2	13.8	D
LC124	HAR1	RV	8.4	10.5	27.5	D
LC124	HAR1	RV	0	5.4	64.6	D
LC125	HAR2	RV	3.3	5.9	32.7	D
LC125	HAR2	RV	10	16.4	0.468	D
LC126	HAR3	RV	2.3	4.5	26.7	D
LC126	HAR3	RV	0	2.3	30.5	D
LC127	HAR4	RV	6.7	8.9	34.2	D
LC127	HAR4	RV	3.9	6.7	24.5	D
LC127	HAR4	RV	0	3.9	20.4	D
LC126	HAR3	RV	17.2	20.5	0.35	D
LC126	HAR3	RV	14.6	17.2	0.506	D
LC126	HAR3	RV	10.3	14.6	0.377	D
LC126	HAR3	RV	4.5	10.3	79.5	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Cadmium (Continued)						
LC125	HAR2	RV	16.4	20.6	0.324	D
LC125	HAR2	RV	7.9	10	53.9	D
LC125	HAR2	RV	5.9	7.9	77.6	D
LC125	HAR2	RV	0	3.3	24.1	D
LC124	HARI	RV	10.5	13	6.21	D
LC152	MED4	RV	9.3	11.2	3.31	D
LC152	MED4	RV	0	1.9	19.5	D
LC153	MED5	RV	3.5	6.9	0.342	D
LC153	MED5	RV	0	3.5	0.36	D
LC155	ML2	LK	0.9	6	25.3	D
LC124	HARI	RV	5.4	8.4	16.3	D
LC155	ML2	LK	0	0.9	34.7	D
LC139	KN1	RV	2.3	3.4	9.5	D
LC139	KN1	RV	0.9	2.3	24	D
LC154	ML1	LK	6.7	12.2	83.3	D
LC154	ML1	LK	2.4	6.7	34.8	D
LC154	ML1	LK	0	2.4	28.9	D
LC152	MED4	RV	13.6	16.2	0.32	D
LC158	MN1	RV	0	2.9	23.8	D
LC158	MN1	RV	6.2	9.5	21	D
LC157	ML4	LK	0	3.6	14.7	D
LC156	ML3	LK	0	3.8	28.4	D
LC155	ML2	LK	0.9	6	26.6	D
LC152	MED4	RV	11.2	13.6	0.422	D
LC152	MED4	RV	5	9.3	47.7	D
LC152	MED4	RV	1.9	5	83.4	D
LC123	DS5	RV	0	1.3	4.2	D
LC122	DS4	RV	0	0.7	9.2	D
LC121	DS3	RV	0	0.7	4.1	D
LC120	DS2	RV	0.8	6.7	2.4	D
LC120	DS2	RV	0	0.8	5.1	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Cadmium (Continued)						
LC101	CAT2	RV	0	2.8	75.3	D
LC104	CAT5	RV	0	3.7	50.8	D
LC104	CAT5	RV	3.7	7.4	27.3	D
LC103	CAT4	RV	4	6	13.2	D
LC103	CAT4	RV	12.9	14.6	3.36	D
LC103	CAT4	RV	11.2	12.9	32.8	D
LC103	CAT4	RV	9.6	11.2	25.5	D
LC103	CAT4	RV	8	9.6	16	D
LC103	CAT4	RV	6	8	18.7	D
LC106	CL2	LK	2.3	3.3	39.1	D
LC106	CL2	LK	0	2.3	34.1	D
LC105	CL1	LK	0	6.7	20.7	D
LC103	CAT4	RV	2	4	22.9	D
LC103	CAT4	RV	0	2	15	D
LC102	CAT3	RV	19.9	22.5	9.68	D
LC102	CAT3	RV	17.2	19.9	9.28	D
LC102	CAT3	RV	14.6	17.2	31.7	D
LC102	CAT3	RV	12.1	14.6	16.5	D
LC102	CAT3	RV	9.7	12.1	14.5	D
LC102	CAT3	RV	7.2	9.7	15.8	D
LC107	CL3	LK	0	8.5	2.6	D
LC107	CL3	LK	0	8.5	2.67	D
LC102	CAT3	RV	2.4	4.8	4.43	D
LC102	CAT3	RV	0	2.4	9.57	D
LC102	CAT3	RV	4.8	7.2	25.1	D
LC101	CAT2	RV	2.8	4.9	16.3	D
LC101	CAT2	RV	6.1	15.5	9.7	D
LC102	CAT3	RV	22.5	23.4	13.8	D
LC101	CAT2	RV	4.9	6.1	10.4	D
LC103	CAT4	RV	14.6	17.1	0.254	ND
LC104	CAT5	RV	11	15	0.286	ND

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Cadmium (Continued)						
LC105	CL1	LK	6.7	10.3	0.243	ND
LC104	CAT5	RV	7.4	11	0.287	ND
LC103	CAT4	RV	17.1	19.2	0.234	ND
LC151	MED3	RV	14.4	20.4	0.257	ND
LC139	KN1	RV	3.4	6	0.24	ND
LC123	DS5	RV	1.3	2.7	0.25	ND
LC122	DS4	RV	0.7	2.1	0.29	ND
LC121	DS3	RV	0.7	2.9	0.26	ND
LC153	MED5	RV	6.9	11	0.278	ND
LC158	MN1	RV	2.9	6.2	0.28	ND
LC157	ML4	LK	3.6	8.9	0.526	ND
LC156	ML3	LK	3.8	7.5	0.62	ND
LC153	MED5	RV	11	14.5	0.268	ND
LC124	HAR1	RV	13	15.7	0.27	ND
LC128	HAR5	RV	6.4	10.5	0.271	ND
LC128	HAR5	RV	2.5	6.4	0.273	ND
LC128	HAR5	RV	0	2.5	0.259	ND
LC127	HAR4	RV	11.5	15.7	0.292	ND
LC127	HAR4	RV	8.9	11.5	0.295	ND
LC127	HAR4	RV	15.7	20.2	0.291	ND
LC124	HAR1	RV	15.7	20.7	0.256	ND
LC184	SWN5	RV	10.8	13.4	0.271	ND
LC160	MN3	RV	0.7	2.4	0.25	ND
LC179	SS5	RV	1.1	4.2	0.238	ND
LC169	RL2	LK	4.4	10.9	0.65	ND
LC168	RL1	LK	2.6	10.3	1.66	ND
LC168	RL1	LK	0	2.6	1.75	ND
LC167	MS5	RV	1.6	4.8	0.273	ND
LC167	MS5	RV	1.6	4.8	0.281	ND
LC166	MS4	RV	3	4.4	0.293	ND
LC166	MS4	RV	0	3	0.258	ND

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Cadmium (Continued)						
LC165	MS3	RV	0.5	2.1	0.269	ND
LC163	MS1	RV	3.6	9.5	0.254	ND
LC162	MN5	RV	2.2	5.9	0.29	ND
LC170	RL3	LK	2.5	10.7	0.896	ND
LC169	RL2	LK	4.4	10.9	0.62	ND
LC162	MN5	RV	0	2.2	0.33	ND
LC161	MN4	RV	2.8	8.2	0.26	ND
LC161	MN4	RV	0	2.8	0.31	ND
LC160	MN3	RV	2.4	8.6	0.26	ND
LC180	SWN1	RV	9.6	12.9	0.243	ND
LC181	SWN2	RV	13	16.3	0.243	ND
LC184	SWN5	RV	8	10.8	0.281	ND
LC182	SWN3	RV	9.5	12.5	0.233	ND
LC113	CN5	RV	0.5	1.8	0.334	ND
LC113	CN5	RV	1.8	3.4	0.702	ND
LC117	CS5	RV	1.9	3.7	0.238	ND
LC117	CS5	RV	3.7	6	0.244	ND
LC143	KN5	RV	1.4	3.6	0.271	ND
LC150	MED2	RV	15.2	21.2	0.249	ND
LC149	MED1	RV	12.4	16.4	0.284	ND
LC149	MED1	RV	16.4	20.4	0.295	ND
LC148	KS5	RV	1	2.8	0.42	ND
LC148	KS5	RV	0	1	0.38	ND
LC147	KS4	RV	1.2	2.5	0.31	ND
LC146	KS3	RV	1.6	3.3	0.249	ND
LC145	KS2	RV	2.7	5.5	0.285	ND
LC118	DEL1	RV	18.8	24.4	0.289	ND
LC132	HS2	RV	1.6	5.4	0.254	ND
LC138	KL4	LK	0	5.1	0.751	ND
LC136	KL2	LK	7.1	10.3	0.81	ND
LC133	HS3	RV	1.9	5.7	0.359	ND

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Cadmium (Continued)						
LC134	HS4	RV	5.9	9.3	0.258	ND
LC170	RL3	LK	0	2.5	1.78	ND
LC140	KN2	RV	3.9	9.3	0.25	ND
LC177	SS3	RV	0.8	4.5	0.27	ND
LC176	SS2	RV	2.2	5.8	0.257	ND
LC175	SS1	RV	7.4	8.9	0.252	ND
LC174	SN3	RV	0	3.5	0.433	ND
LC171	RL4	LK	3.5	8.5	0.56	ND
LC141	KN3	RV	3.1	5.1	0.24	ND
LC171	RL4	LK	8.5	10.2	0.77	ND
LC173	SN2	RV	1.9	9.5	0.296	ND
LC172	SN1	RV	5.6	9.9	0.327	ND
LC171	RL4	LK	0	3.5	1.4	ND
LC100	CAT1	RV	14.1	17.7	0.24	ND
LC100	CAT1	RV	17.7	19.5	0.26	ND
Copper						
LC143	KN5	RV	0	0.6	157	D
LC144	KS1	RV	2.8	8.8	14.3	D
LC147	KS4	RV	0	1.2	44.3	D
LC145	KS2	RV	2.7	5.5	25.2	D
LC151	MED3	RV	11.2	14.4	17.6	D
LC151	MED3	RV	2.6	5.7	128	D
LC151	MED3	RV	0	2.6	107	D
LC150	MED2	RV	5.6	8	113	D
LC150	MED2	RV	2.8	5.6	142	D
LC150	MED2	RV	0	2.8	129	D
LC149	MED1	RV	12.4	16.4	14.5	D
LC149	MED1	RV	10.8	12.4	14.7	D
LC149	MED1	RV	7.8	10.8	107	D
LC149	MED1	RV	2.7	7.8	222	D
LC149	MED1	RV	0	2.7	135	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Copper (Continued)						
LC149	MED1	RV	16.4	20.4	13.3	D
LC148	KS5	RV	1	2.8	10.3	D
LC148	KS5	RV	0	1	20.9	D
LC151	MED3	RV	9.2	11.2	523	D
LC151	MED3	RV	5.7	9.2	167	D
LC150	MED2	RV	15.2	21.2	7.29	D
LC150	MED2	RV	11.8	15.2	72.4	D
LC150	MED2	RV	8	11.8	204	D
LC147	KS4	RV	1.2	2.5	17.9	D
LC146	KS3	RV	1.6	3.3	17.3	D
LC146	KS3	RV	0	1.6	36.7	D
LC145	KS2	RV	0	2.7	49.9	D
LC144	KS1	RV	0	2.8	207	D
LC131	HS1	RV	5	10.2	15.4	D
LC132	HS2	RV	1.6	5.4	14.2	D
LC100	CAT1	RV	5.4	14.1	113	D
LC100	CAT1	RV	2.2	5.4	123	D
LC100	CAT1	RV	0	2.2	69.2	D
LC138	KL4	LK	5.1	9.7	76	D
LC138	KL4	LK	0	5.1	37.8	D
LC137	KL3	LK	4	10.4	54.6	D
LC137	KL3	LK	4	10.4	58.3	D
LC137	KL3	LK	0	4	102	D
LC136	KL2	LK	7.1	10.3	50.2	D
LC136	KL2	LK	3.7	7.1	213	D
LC136	KL2	LK	0	3.7	126	D
LC135	KL1	LK	7.6	11	109	D
LC135	KL1	LK	4.1	7.6	127	D
LC135	KL1	LK	0	4.1	104	D
LC119	DS1	RV	1.9	5.7	14.9	D
LC119	DS1	RV	1.9	5.7	15	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Copper (Continued)						
LC119	DS1	RV	0	1.9	86.2	D
LC134	HS4	RV	5.9	9.3	15.6	D
LC134	HS4	RV	1.7	5.9	11	D
LC134	HS4	RV	0	1.7	79.4	D
LC133	HS3	RV	5.7	9.5	20.5	D
LC133	HS3	RV	1.9	5.7	21.8	D
LC133	HS3	RV	0	1.9	25.3	D
LC132	HS2	RV	5.4	9.5	19.3	D
LC132	HS2	RV	0	1.6	104	D
LC131	HS1	RV	0	5	64.9	D
LC172	SN1	RV	1.7	5.6	17.1	D
LC142	KN4	RV	0	0.9	126	D
LC141	KN3	RV	3.1	5.1	9.8	D
LC140	KN2	RV	3.9	9.3	15.3	D
LC140	KN2	RV	3.9	9.3	20.2	D
LC140	KN2	RV	1.8	3.9	16.4	D
LC140	KN2	RV	0	1.8	183	D
LC178	SS4	RV	0.9	3.5	23.2	D
LC178	SS4	RV	0	0.9	46.9	D
LC143	KN5	RV	0.6	1.4	26	D
LC142	KN4	RV	1.8	3.5	14.5	D
LC142	KN4	RV	0.9	1.8	135	D
LC177	SS3	RV	0.8	4.5	23.9	D
LC177	SS3	RV	0	0.8	52.4	D
LC176	SS2	RV	2.2	5.8	16.1	D
LC176	SS2	RV	0	2.2	135	D
LC175	SS1	RV	0	1.4	122	D
LC175	SS1	RV	7.4	8.9	14.9	D
LC175	SS1	RV	1.4	7.4	21.6	D
LC159	MN2	RV	2.9	10.3	15.3	D
LC141	KN3	RV	1.3	3.1	14.2	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Copper (Continued)						
LC143	KN5	RV	1.4	3.6	16.7	D
LC141	KN3	RV	0	1.3	140	D
LC172	SN1	RV	5.6	9.9	23.8	D
LC173	SN2	RV	0	1.9	47.6	D
LC174	SN3	RV	3.5	6.7	31.2	D
LC159	MN2	RV	1.4	2.9	131	D
LC159	MN2	RV	0	1.4	127	D
LC174	SN3	RV	0	3.5	25.4	D
LC173	SN2	RV	1.9	9.5	20.5	D
LC151	MED3	RV	14.4	20.4	17.2	D
LC152	MED4	RV	1.9	5	335	D
LC152	MED4	RV	0	1.9	86.2	D
LC152	MED4	RV	11.2	13.6	20.6	D
LC153	MED5	RV	0	3.5	20.3	D
LC153	MED5	RV	6.9	11	19.8	D
LC154	ML1	LK	2.4	6.7	131	D
LC139	KN1	RV	2.3	3.4	14	D
LC139	KN1	RV	0.9	2.3	135	D
LC154	ML1	LK	6.7	12.2	319	D
LC154	ML1	LK	0	2.4	109	D
LC153	MED5	RV	3.5	6.9	27.1	D
LC153	MED5	RV	11	14.5	17.4	D
LC152	MED4	RV	13.6	16.2	17.2	D
LC152	MED4	RV	5	9.3	223	D
LC152	MED4	RV	9.3	11.2	20.9	D
LC100	CAT1	RV	14.1	17.7	8.6	D
LC100	CAT1	RV	17.7	19.5	10.6	D
LC101	CAT2	RV	0	2.8	143	D
LC101	CAT2	RV	4.9	6.1	68.1	D
LC102	CAT3	RV	22.5	23.4	99	D
LC101	CAT2	RV	6.1	15.5	73.4	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Copper (Continued)						
LC103	CAT4	RV	0	2	58.5	D
LC102	CAT3	RV	19.9	22.5	121	D
LC102	CAT3	RV	17.2	19.9	111	D
LC102	CAT3	RV	14.6	17.2	143	D
LC102	CAT3	RV	12.1	14.6	121	D
LC102	CAT3	RV	9.7	12.1	115	D
LC102	CAT3	RV	7.2	9.7	119	D
LC102	CAT3	RV	2.4	4.8	56	D
LC102	CAT3	RV	0	2.4	92.9	D
LC102	CAT3	RV	4.8	7.2	107	D
LC101	CAT2	RV	2.8	4.9	69.6	D
LC110	CN2	RV	8.9	13.3	122	D
LC113	CN5	RV	0.5	1.8	17.8	D
LC112	CN4	RV	2.7	9.1	18.9	D
LC118	DEL1	RV	15.6	18.8	369	D
LC118	DEL1	RV	12.5	15.6	119	D
LC118	DEL1	RV	7.6	12.5	85.1	D
LC118	DEL1	RV	3.8	7.6	97.6	D
LC118	DEL1	RV	0	3.8	72.9	D
LC117	CS5	RV	3.7	6	16.3	D
LC118	DEL1	RV	18.8	24.4	12.7	D
LC117	CS5	RV	1.9	3.7	16.3	D
LC117	CS5	RV	0	1.9	61.1	D
LC116	CS3	RV	5.5	9.1	168	D
LC116	CS3	RV	2.7	5.5	150	D
LC116	CS3	RV	0	2.7	137	D
LC115	CS2	RV	6	10	45	D
LC115	CS2	RV	3	6	201	D
LC115	CS2	RV	0	3	124	D
LC114	CS1	RV	3	5	125	D
LC114	CS1	RV	0	3	108	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Copper (Continued)						
LC114	CS1	RV	5	9	139	D
LC113	CN5	RV	1.8	3.4	16.1	D
LC112	CN4	RV	0.8	2.7	134	D
LC112	CN4	RV	0	0.8	100	D
LC111	CN3	RV	5	6.6	106	D
LC111	CN3	RV	3.3	5	99.4	D
LC111	CN3	RV	0	3.3	126	D
LC180	SWN1	RV	5.3	7.8	15.8	D
LC180	SWN1	RV	3	5.3	24.4	D
LC180	SWN1	RV	0	3	40	D
LC160	MN3	RV	2.4	8.6	23.8	D
LC172	SN1	RV	0	1.7	72.1	D
LC171	RL4	LK	8.5	10.2	43.9	D
LC171	RL4	LK	3.5	8.5	24.4	D
LC171	RL4	LK	0	3.5	44.1	D
LC170	RL3	LK	0	2.5	68.9	D
LC170	RL3	LK	2.5	10.7	58.2	D
LC169	RL2	LK	4.4	10.9	34.4	D
LC169	RL2	LK	4.4	10.9	38	D
LC169	RL2	LK	0	4.4	67.8	D
LC168	RL1	LK	2.6	10.3	50.4	D
LC168	RL1	LK	0	2.6	53.9	D
LC167	MS5	RV	1.6	4.8	14	D
LC167	MS5	RV	1.6	4.8	14	D
LC167	MS5	RV	0	1.6	10.6	D
LC166	MS4	RV	3	4.4	15.4	D
LC166	MS4	RV	0	3	13.2	D
LC165	MS3	RV	0.5	2.1	15.8	D
LC165	MS3	RV	0	0.5	144	D
LC164	MS2	RV	1.2	3.7	17.1	D
LC164	MS2	RV	0	1.2	138	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Copper (Continued)						
LC163	MS1	RV	3.6	9.5	17.9	D
LC163	MS1	RV	1.2	3.6	26.7	D
LC163	MS1	RV	0	1.2	140	D
LC162	MN5	RV	2.2	5.9	13.8	D
LC162	MN5	RV	0	2.2	13.5	D
LC161	MN4	RV	2.8	8.2	17.5	D
LC161	MN4	RV	0	2.8	14	D
LC180	SWN1	RV	7.8	9.6	16	D
LC179	SS5	RV	1.1	4.2	9.35	D
LC160	MN3	RV	0.7	2.4	24.3	D
LC160	MN3	RV	0	0.7	279	D
LC184	SWN5	RV	8	10.8	12.4	D
LC184	SWN5	RV	1.8	8	61.3	D
LC184	SWN5	RV	0	1.8	382	D
LC183	SWN4	RV	0	2.7	92.8	D
LC182	SWN3	RV	1.8	3.4	116	D
LC182	SWN3	RV	0	1.8	112	D
LC182	SWN3	RV	9.5	12.5	5.89	D
LC182	SWN3	RV	7.6	9.5	259	D
LC182	SWN3	RV	4.8	7.6	152	D
LC182	SWN3	RV	3.4	4.8	134	D
LC181	SWN2	RV	13	16.3	5.82	D
LC179	SS5	RV	0	1.1	78.2	D
LC184	SWN5	RV	10.8	13.4	12.6	D
LC183	SWN4	RV	13.8	19.8	12.1	D
LC183	SWN4	RV	11.3	13.8	205	D
LC183	SWN4	RV	8.3	11.3	163	D
LC183	SWN4	RV	5.2	8.3	134	D
LC183	SWN4	RV	2.7	5.2	133	D
LC180	SWN1	RV	9.6	12.9	10.8	D
LC181	SWN2	RV	4.7	7.6	144	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Copper (Continued)						
LC181	SWN2	RV	7.6	9.1	124	D
LC181	SWN2	RV	11.1	13	122	D
LC181	SWN2	RV	9.1	11.1	215	D
LC181	SWN2	RV	0	4.7	131	D
LC180	SWN1	RV	12.9	17.5	16.7	D
LC103	CAT4	RV	2	4	78.7	D
LC103	CAT4	RV	8	9.6	113	D
LC103	CAT4	RV	11.2	12.9	152	D
LC103	CAT4	RV	17.1	19.2	13.3	D
LC104	CAT5	RV	3.7	7.4	114	D
LC104	CAT5	RV	11	15	16.8	D
LC105	CL1	LK	0	6.7	98.4	D
LC104	CAT5	RV	0	3.7	118	D
LC109	CN1	RV	8.5	12.8	26.6	D
LC109	CN1	RV	3.2	8.5	209	D
LC109	CN1	RV	0	3.2	81.6	D
LC108	CL4	LK	0	3	19.1	D
LC107	CL3	LK	0	8.5	42.9	D
LC107	CL3	LK	0	8.5	45.3	D
LC106	CL2	LK	2.3	3.3	209	D
LC106	CL2	LK	0	2.3	120	D
LC110	CN2	RV	4.4	8.9	109	D
LC110	CN2	RV	0	4.4	91.4	D
LC105	CL1	LK	6.7	10.3	8.46	D
LC104	CAT5	RV	7.4	11	18	D
LC103	CAT4	RV	4	6	98.7	D
LC103	CAT4	RV	14.6	17.1	13.5	D
LC103	CAT4	RV	12.9	14.6	30	D
LC103	CAT4	RV	9.6	11.2	138	D
LC103	CAT4	RV	6	8	115	D
LC125	HAR2	RV	0	3.3	133	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Copper (Continued)						
LC126	HAR3	RV	0	2.3	92.1	D
LC126	HAR3	RV	4.5	10.3	264	D
LC131	HS1	RV	0	5	63.3	D
LC130	HN2	RV	0.8	4.1	126	D
LC130	HN2	RV	0	0.8	112	D
LC129	HN1	RV	2.8	4.9	98.1	D
LC129	HN1	RV	0	2.8	77.9	D
LC128	HAR5	RV	10.5	14.1	17.8	D
LC128	HAR5	RV	6.4	10.5	10.5	D
LC127	HAR4	RV	11.5	15.7	17.2	D
LC127	HAR4	RV	8.9	11.5	14.8	D
LC127	HAR4	RV	6.7	8.9	165	D
LC127	HAR4	RV	3.9	6.7	134	D
LC127	HAR4	RV	0	3.9	119	D
LC127	HAR4	RV	15.7	20.2	18.5	D
LC126	HAR3	RV	17.2	20.5	18.4	D
LC126	HAR3	RV	14.6	17.2	19.9	D
LC126	HAR3	RV	10.3	14.6	14.3	D
LC128	HAR5	RV	2.5	6.4	13.6	D
LC128	HAR5	RV	0	2.5	15.3	D
LC126	HAR3	RV	2.3	4.5	118	D
LC125	HAR2	RV	16.4	20.6	18.9	D
LC125	HAR2	RV	10	16.4	19.2	D
LC125	HAR2	RV	7.9	10	194	D
LC125	HAR2	RV	5.9	7.9	350	D
LC125	HAR2	RV	3.3	5.9	167	D
LC139	KN1	RV	3.4	6	16.3	D
LC155	ML2	LK	0.9	6	133	D
LC155	ML2	LK	0.9	6	142	D
LC155	ML2	LK	0	0.9	106	D
LC124	HAR1	RV	5.4	8.4	77.3	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Copper (Continued)						
LC123	DS5	RV	1.3	2.7	28.1	D
LC123	DS5	RV	0	1.3	36.5	D
LC122	DS4	RV	0.7	2.1	18.2	D
LC122	DS4	RV	0	0.7	54.6	D
LC121	DS3	RV	0.7	2.9	16.1	D
LC121	DS3	RV	0	0.7	31.4	D
LC120	DS2	RV	0.8	6.7	16.6	D
LC120	DS2	RV	0	0.8	78.5	D
LC158	MN1	RV	2.9	6.2	15.7	D
LC158	MN1	RV	0	2.9	123	D
LC158	MN1	RV	6.2	9.5	121	D
LC124	HAR1	RV	13	15.7	11	D
LC124	HAR1	RV	10.5	13	41.1	D
LC124	HAR1	RV	8.4	10.5	149	D
LC124	HAR1	RV	0	5.4	266	D
LC124	HAR1	RV	15.7	20.7	6.91	D
LC157	ML4	LK	3.6	8.9	29.7	D
LC157	ML4	LK	0	3.6	53.1	D
LC156	ML3	LK	3.8	7.5	35.8	D
LC156	ML3	LK	0	3.8	143	D
Iron						
LC155	ML2	LK	0	0.9	74300	D
LC155	ML2	LK	0.9	6	109000	D
LC158	MN1	RV	0	2.9	125000	D
LC158	MN1	RV	6.2	9.5	119000	D
LC124	HAR1	RV	13	15.7	11300	D
LC124	HAR1	RV	10.5	13	20800	D
LC123	DS5	RV	1.3	2.7	20000	D
LC123	DS5	RV	0	1.3	11300	D
LC122	DS4	RV	0.7	2.1	20900	D
LC122	DS4	RV	0	0.7	24000	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Iron (Continued)						
LC121	DS3	RV	0.7	2.9	19500	D
LC121	DS3	RV	0	0.7	11000	D
LC120	DS2	RV	0.8	6.7	17000	D
LC120	DS2	RV	0	0.8	42600	D
LC124	HAR1	RV	0	5.4	105000	D
LC124	HAR1	RV	15.7	20.7	11300	D
LC124	HAR1	RV	8.4	10.5	41100	D
LC124	HAR1	RV	5.4	8.4	40300	D
LC158	MN1	RV	2.9	6.2	16700	D
LC157	ML4	LK	3.6	8.9	25200	D
LC157	ML4	LK	0	3.6	36100	D
LC156	ML3	LK	3.8	7.5	25200	D
LC155	ML2	LK	0.9	6	112000	D
LC156	ML3	LK	0	3.8	76900	D
LC125	HAR2	RV	0	3.3	114000	D
LC125	HAR2	RV	10	16.4	21600	D
LC131	HS1	RV	5	10.2	18800	D
LC131	HS1	RV	0	5	29900	D
LC130	HN2	RV	0.8	4.1	105000	D
LC130	HN2	RV	0	0.8	104000	D
LC129	HN1	RV	2.8	4.9	114000	D
LC129	HN1	RV	0	2.8	97700	D
LC128	HAR5	RV	10.5	14.1	18600	D
LC128	HAR5	RV	6.4	10.5	11800	D
LC128	HAR5	RV	2.5	6.4	11700	D
LC128	HAR5	RV	0	2.5	16100	D
LC127	HAR4	RV	11.5	15.7	16900	D
LC127	HAR4	RV	8.9	11.5	13200	D
LC127	HAR4	RV	6.7	8.9	72600	D
LC127	HAR4	RV	3.9	6.7	96600	D
LC127	HAR4	RV	0	3.9	93000	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Iron (Continued)						
LC127	HAR4	RV	15.7	20.2	16200	D
LC126	HAR3	RV	17.2	20.5	17900	D
LC126	HAR3	RV	14.6	17.2	19100	D
LC126	HAR3	RV	10.3	14.6	17400	D
LC126	HAR3	RV	2.3	4.5	107000	D
LC126	HAR3	RV	0	2.3	110000	D
LC126	HAR3	RV	4.5	10.3	105000	D
LC125	HAR2	RV	16.4	20.6	18500	D
LC125	HAR2	RV	7.9	10	55300	D
LC125	HAR2	RV	5.9	7.9	91600	D
LC125	HAR2	RV	3.3	5.9	110000	D
LC103	CAT4	RV	6	8	96300	D
LC110	CN2	RV	4.4	8.9	89900	D
LC110	CN2	RV	0	4.4	86700	D
LC109	CN1	RV	8.5	12.8	25500	D
LC109	CN1	RV	3.2	8.5	127000	D
LC109	CN1	RV	0	3.2	81700	D
LC108	CL4	LK	0	3	18600	D
LC107	CL3	LK	0	8.5	36900	D
LC107	CL3	LK	0	8.5	33000	D
LC106	CL2	LK	2.3	3.3	47900	D
LC106	CL2	LK	0	2.3	50800	D
LC105	CL1	LK	6.7	10.3	14800	D
LC105	CL1	LK	0	6.7	34200	D
LC104	CAT5	RV	0	3.7	67600	D
LC104	CAT5	RV	11	15	11800	D
LC104	CAT5	RV	7.4	11	13800	D
LC104	CAT5	RV	3.7	7.4	87400	D
LC103	CAT4	RV	4	6	65600	D
LC103	CAT4	RV	17.1	19.2	9090	D
LC103	CAT4	RV	14.6	17.1	8910	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Iron (Continued)						
LC103	CAT4	RV	12.9	14.6	23900	D
LC103	CAT4	RV	11.2	12.9	146000	D
LC103	CAT4	RV	8	9.6	108000	D
LC103	CAT4	RV	9.6	11.2	128000	D
LC180	SWN1	RV	9.6	12.9	14200	D
LC182	SWN3	RV	1.8	3.4	121000	D
LC182	SWN3	RV	0	1.8	123000	D
LC182	SWN3	RV	9.5	12.5	14500	D
LC182	SWN3	RV	7.6	9.5	104000	D
LC182	SWN3	RV	4.8	7.6	128000	D
LC182	SWN3	RV	3.4	4.8	131000	D
LC181	SWN2	RV	13	16.3	14700	D
LC181	SWN2	RV	11.1	13	30800	D
LC181	SWN2	RV	9.1	11.1	127000	D
LC160	MN3	RV	2.4	8.6	17300	D
LC160	MN3	RV	0.7	2.4	32900	D
LC160	MN3	RV	0	0.7	96400	D
LC179	SS5	RV	1.1	4.2	24500	D
LC179	SS5	RV	0	1.1	56300	D
LC184	SWN5	RV	10.8	13.4	12700	D
LC184	SWN5	RV	8	10.8	11600	D
LC184	SWN5	RV	1.8	8	19700	D
LC184	SWN5	RV	0	1.8	68200	D
LC183	SWN4	RV	13.8	19.8	12100	D
LC183	SWN4	RV	11.3	13.8	102000	D
LC183	SWN4	RV	8.3	11.3	125000	D
LC183	SWN4	RV	5.2	8.3	97300	D
LC183	SWN4	RV	2.7	5.2	112000	D
LC183	SWN4	RV	0	2.7	96000	D
LC181	SWN2	RV	7.6	9.1	112000	D
LC180	SWN1	RV	12.9	17.5	21600	D

Table C-2 (Continued)
Metals Concentrations in Sediments-Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Iron (Continued)						
LC181	SWN2	RV	0	4.7	106000	D
LC181	SWN2	RV	4.7	7.6	116000	D
LC161	MN4	RV	0	2.8	11200	D
LC172	SN1	RV	1.7	5.6	18900	D
LC172	SN1	RV	0	1.7	30300	D
LC171	RL4	LK	3.5	8.5	16000	D
LC171	RL4	LK	0	3.5	23700	D
LC170	RL3	LK	0	2.5	26700	D
LC170	RL3	LK	2.5	10.7	42300	D
LC169	RL2	LK	4.4	10.9	35200	D
LC169	RL2	LK	4.4	10.9	42300	D
LC169	RL2	LK	0	4.4	29200	D
LC168	RL1	LK	2.6	10.3	12600	D
LC167	MS5	RV	1.6	4.8	12000	D
LC167	MS5	RV	1.6	4.8	13800	D
LC167	MS5	RV	0	1.6	19700	D
LC166	MS4	RV	3	4.4	12500	D
LC166	MS4	RV	0	3	19300	D
LC165	MS3	RV	0.5	2.1	17000	D
LC165	MS3	RV	0	0.5	56700	D
LC164	MS2	RV	1.2	3.7	16000	D
LC171	RL4	LK	8.5	10.2	19300	D
LC168	RL1	LK	0	2.6	13800	D
LC161	MN4	RV	2.8	8.2	18200	D
LC162	MN5	RV	0	2.2	17000	D
LC163	MS1	RV	1.2	3.6	20100	D
LC164	MS2	RV	0	1.2	109000	D
LC163	MS1	RV	3.6	9.5	15100	D
LC163	MS1	RV	0	1.2	72300	D
LC162	MN5	RV	2.2	5.9	18100	D
LC180	SWN1	RV	7.8	9.6	15500	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Iron (Continued)						
LC180	SWN1	RV	5.3	7.8	14300	D
LC180	SWN1	RV	3	5.3	21900	D
LC180	SWN1	RV	0	3	25300	D
LC110	CN2	RV	8.9	13.3	139000	D
LC112	CN4	RV	0	0.8	107000	D
LC118	DEL1	RV	18.8	24.4	13700	D
LC118	DEL1	RV	15.6	18.8	81700	D
LC118	DEL1	RV	0	3.8	83200	D
LC117	CS5	RV	3.7	6	21400	D
LC117	CS5	RV	1.9	3.7	16900	D
LC117	CS5	RV	0	1.9	36100	D
LC116	CS3	RV	5.5	9.1	96300	D
LC115	CS2	RV	3	6	141000	D
LC115	CS2	RV	6	10	17600	D
LC115	CS2	RV	0	3	66500	D
LC114	CS1	RV	3	5	121000	D
LC114	CS1	RV	0	3	53800	D
LC114	CS1	RV	5	9	123000	D
LC113	CN5	RV	1.8	3.4	29300	D
LC113	CN5	RV	0.5	1.8	11100	D
LC118	DEL1	RV	12.5	15.6	101000	D
LC118	DEL1	RV	7.6	12.5	74600	D
LC118	DEL1	RV	3.8	7.6	84500	D
LC116	CS3	RV	2.7	5.5	106000	D
LC116	CS3	RV	0	2.7	84400	D
LC112	CN4	RV	2.7	9.1	27500	D
LC112	CN4	RV	0.8	2.7	100000	D
LC111	CN3	RV	5	6.6	104000	D
LC111	CN3	RV	3.3	5	103000	D
LC111	CN3	RV	0	3.3	117000	D
LC101	CAT2	RV	0	2.8	64800	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Iron (Continued)						
LC101	CAT2	RV	4.9	6.1	54900	D
LC102	CAT3	RV	9.7	12.1	90600	D
LC102	CAT3	RV	7.2	9.7	88300	D
LC103	CAT4	RV	2	4	73600	D
LC103	CAT4	RV	0	2	59500	D
LC102	CAT3	RV	19.9	22.5	111000	D
LC102	CAT3	RV	17.2	19.9	93400	D
LC102	CAT3	RV	14.6	17.2	102000	D
LC102	CAT3	RV	12.1	14.6	111000	D
LC102	CAT3	RV	4.8	7.2	69600	D
LC102	CAT3	RV	2.4	4.8	47700	D
LC102	CAT3	RV	0	2.4	73200	D
LC102	CAT3	RV	22.5	23.4	107000	D
LC101	CAT2	RV	6.1	15.5	51900	D
LC101	CAT2	RV	2.8	4.9	56400	D
LC152	MED4	RV	9.3	11.2	14600	D
LC139	KN1	RV	2.3	3.4	17200	D
LC139	KN1	RV	0.9	2.3	111000	D
LC154	ML1	LK	6.7	12.2	76800	D
LC154	ML1	LK	2.4	6.7	124000	D
LC154	ML1	LK	0	2.4	108000	D
LC153	MED5	RV	6.9	11	18000	D
LC139	KN1	RV	3.4	6	16000	D
LC153	MED5	RV	3.5	6.9	22200	D
LC153	MED5	RV	0	3.5	21000	D
LC153	MED5	RV	11	14.5	11200	D
LC152	MED4	RV	13.6	16.2	15400	D
LC152	MED4	RV	11.2	13.6	19100	D
LC152	MED4	RV	5	9.3	58000	D
LC152	MED4	RV	1.9	5	96400	D
LC152	MED4	RV	0	1.9	63600	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Iron (Continued)						
LC172	SN1	RV	5.6	9.9	8730	D
LC143	KN5	RV	1.4	3.6	27000	D
LC143	KN5	RV	0.6	1.4	22400	D
LC142	KN4	RV	1.8	3.5	12200	D
LC142	KN4	RV	0.9	1.8	19100	D
LC142	KN4	RV	0	0.9	115000	D
LC141	KN3	RV	3.1	5.1	11000	D
LC141	KN3	RV	1.3	3.1	13900	D
LC141	KN3	RV	0	1.3	120000	D
LC140	KN2	RV	3.9	9.3	16900	D
LC140	KN2	RV	3.9	9.3	22300	D
LC140	KN2	RV	1.8	3.9	17000	D
LC140	KN2	RV	0	1.8	114000	D
LC178	SS4	RV	0.9	3.5	40500	D
LC178	SS4	RV	0	0.9	39000	D
LC177	SS3	RV	0.8	4.5	22400	D
LC177	SS3	RV	0	0.8	43200	D
LC176	SS2	RV	2.2	5.8	18900	D
LC176	SS2	RV	0	2.2	103000	D
LC175	SS1	RV	0	1.4	97400	D
LC175	SS1	RV	7.4	8.9	17200	D
LC175	SS1	RV	1.4	7.4	23100	D
LC159	MN2	RV	2.9	10.3	13800	D
LC159	MN2	RV	1.4	2.9	89200	D
LC159	MN2	RV	0	1.4	149000	D
LC174	SN3	RV	3.5	6.7	11400	D
LC173	SN2	RV	0	1.9	25000	D
LC173	SN2	RV	1.9	9.5	36500	D
LC174	SN3	RV	0	3.5	9590	D
LC131	HS1	RV	0	5	32500	D
LC132	HS2	RV	5.4	9.5	17000	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Iron, (Continued)						
LC100	CAT1	RV	14.1	17.7	10900	D
LC100	CAT1	RV	0	2.2	59400	D
LC138	KL4	LK	5.1	9.7	33900	D
LC138	KL4	LK	0	5.1	28100	D
LC137	KL3	LK	4	10.4	28000	D
LC137	KL3	LK	4	10.4	27300	D
LC137	KL3	LK	0	4	56700	D
LC136	KL2	LK	7.1	10.3	25900	D
LC136	KL2	LK	3.7	7.1	92200	D
LC135	KL1	LK	0	4.1	98600	D
LC119	DS1	RV	1.9	5.7	14300	D
LC119	DS1	RV	1.9	5.7	13400	D
LC119	DS1	RV	0	1.9	49800	D
LC134	HS4	RV	5.9	9.3	13100	D
LC134	HS4	RV	1.7	5.9	13200	D
LC134	HS4	RV	0	1.7	39900	D
LC133	HS3	RV	5.7	9.5	21900	D
LC100	CAT1	RV	5.4	14.1	84600	D
LC100	CAT1	RV	2.2	5.4	88100	D
LC136	KL2	LK	0	3.7	72400	D
LC135	KL1	LK	7.6	11	122000	D
LC135	KL1	LK	4.1	7.6	112000	D
LC133	HS3	RV	1.9	5.7	25000	D
LC133	HS3	RV	0	1.9	22400	D
LC132	HS2	RV	1.6	5.4	16600	D
LC100	CAT1	RV	17.7	19.5	12300	D
LC132	HS2	RV	0	1.6	55300	D
LC143	KN5	RV	0	0.6	43700	D
LC145	KS2	RV	2.7	5.5	13800	D
LC145	KS2	RV	0	2.7	20800	D
LC151	MED3	RV	11.2	14.4	14600	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Iron (Continued)						
LC151	MED3	RV	9.2	11.2	75100	D
LC151	MED3	RV	5.7	9.2	112000	D
LC151	MED3	RV	2.6	5.7	126000	D
LC151	MED3	RV	0	2.6	97100	D
LC150	MED2	RV	15.2	21.2	12300	D
LC150	MED2	RV	11.8	15.2	28500	D
LC150	MED2	RV	8	11.8	107000	D
LC150	MED2	RV	5.6	8	128000	D
LC150	MED2	RV	2.8	5.6	128000	D
LC150	MED2	RV	0	2.8	136000	D
LC149	MED1	RV	12.4	16.4	13800	D
LC151	MED3	RV	14.4	20.4	17200	D
LC149	MED1	RV	10.8	12.4	11500	D
LC149	MED1	RV	7.8	10.8	35800	D
LC149	MED1	RV	2.7	7.8	133000	D
LC149	MED1	RV	0	2.7	103000	D
LC149	MED1	RV	16.4	20.4	12300	D
LC148	KS5	RV	1	2.8	6190	D
LC148	KS5	RV	0	1	16600	D
LC147	KS4	RV	1.2	2.5	12900	D
LC147	KS4	RV	0	1.2	19600	D
LC146	KS3	RV	1.6	3.3	15500	D
LC146	KS3	RV	0	1.6	19100	D
LC144	KS1	RV	0	2.8	65500	D
LC144	KS1	RV	2.8	8.8	15100	D
Lead						
LC144	KS1	RV	2.8	8.8	21.7	D
LC146	KS3	RV	1.6	3.3	24.4	D
LC146	KS3	RV	0	1.6	1030	D
LC151	MED3	RV	11.2	14.4	2030	D
LC151	MED3	RV	9.2	11.2	32900	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Lead (Continued)						
LC151	MED3	RV	2.6	5.7	6360	D
LC151	MED3	RV	0	2.6	3550	D
LC150	MED2	RV	15.2	21.2	21.6	D
LC150	MED2	RV	11.8	15.2	3060	D
LC150	MED2	RV	8	11.8	8850	D
LC150	MED2	RV	5.6	8	6230	D
LC151	MED3	RV	14.4	20.4	132	D
LC149	MED1	RV	12.4	16.4	29.6	D
LC149	MED1	RV	10.8	12.4	540	D
LC149	MED1	RV	7.8	10.8	7070	D
LC149	MED1	RV	2.7	7.8	12500	D
LC149	MED1	RV	0	2.7	5670	D
LC149	MED1	RV	16.4	20.4	22	D
LC148	KS5	RV	1	2.8	19.3	D
LC148	KS5	RV	0	1	30.2	D
LC151	MED3	RV	5.7	9.2	9240	D
LC150	MED2	RV	2.8	5.6	6810	D
LC150	MED2	RV	0	2.8	6250	D
LC147	KS4	RV	1.2	2.5	6.7	D
LC147	KS4	RV	0	1.2	2040	D
LC145	KS2	RV	2.7	5.5	26.7	D
LC145	KS2	RV	0	2.7	905	D
LC131	HS1	RV	0	5	2820	D
LC133	HS3	RV	0	1.9	375	D
LC133	HS3	RV	5.7	9.5	23.6	D
LC133	HS3	RV	1.9	5.7	35.8	D
LC100	CAT1	RV	14.1	17.7	28.1	D
LC138	KL4	LK	5.1	9.7	1670	D
LC138	KL4	LK	0	5.1	47.6	D
LC137	KL3	LK	4	10.4	220	D
LC137	KL3	LK	4	10.4	261	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Lead (Continued)						
LC137	KL3	LK	0	4	3200	D
LC136	KL2	LK	7.1	10.3	48	D
LC136	KL2	LK	3.7	7.1	12800	D
LC100	CAT1	RV	17.7	19.5	16.2	D
LC135	KL1	LK	7.6	11	6310	D
LC135	KL1	LK	4.1	7.6	6910	D
LC135	KL1	LK	0	4.1	3010	D
LC119	DS1	RV	1.9	5.7	297	D
LC119	DS1	RV	1.9	5.7	110	D
LC119	DS1	RV	0	1.9	2810	D
LC134	HS4	RV	5.9	9.3	20.8	D
LC134	HS4	RV	1.7	5.9	35.2	D
LC100	CAT1	RV	5.4	14.1	2720	D
LC100	CAT1	RV	2.2	5.4	2660	D
LC100	CAT1	RV	0	2.2	2170	D
LC136	KL2	LK	0	3.7	4620	D
LC134	HS4	RV	0	1.7	3590	D
LC132	HS2	RV	5.4	9.5	23.1	D
LC132	HS2	RV	1.6	5.4	22.3	D
LC132	HS2	RV	0	1.6	4170	D
LC173	SN2	RV	0	1.9	1210	D
LC144	KS1	RV	0	2.8	9910	D
LC143	KN5	RV	0	0.6	6210	D
LC159	MN2	RV	1.4	2.9	6510	D
LC159	MN2	RV	0	1.4	4100	D
LC143	KN5	RV	1.4	3.6	87.7	D
LC143	KN5	RV	0.6	1.4	144	D
LC142	KN4	RV	1.8	3.5	94.2	D
LC142	KN4	RV	0.9	1.8	3280	D
LC142	KN4	RV	0	0.9	4520	D
LC140	KN2	RV	3.9	9.3	24.9	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Lead (Continued)						
LC140	KN2	RV	3.9	9.3	34.4	D
LC178	SS4	RV	0	0.9	1020	D
LC177	SS3	RV	0.8	4.5	29.4	D
LC177	SS3	RV	0	0.8	1800	D
LC176	SS2	RV	2.2	5.8	25.7	D
LC176	SS2	RV	0	2.2	6530	D
LC175	SS1	RV	0	1.4	5610	D
LC175	SS1	RV	7.4	8.9	21.9	D
LC175	SS1	RV	1.4	7.4	34.3	D
LC141	KN3	RV	3.1	5.1	50.4	D
LC141	KN3	RV	1.3	3.1	171	D
LC141	KN3	RV	0	1.3	7210	D
LC140	KN2	RV	1.8	3.9	94.7	D
LC140	KN2	RV	0	1.8	7490	D
LC178	SS4	RV	0.9	3.5	54.5	D
LC159	MN2	RV	2.9	10.3	36.5	D
LC173	SN2	RV	1.9	9.5	30.1	D
LC174	SN3	RV	0	3.5	25.2	D
LC174	SN3	RV	3.5	6.7	131	D
LC152	MED4	RV	9.3	11.2	890	D
LC152	MED4	RV	5	9.3	16900	D
LC152	MED4	RV	11.2	13.6	39.9	D
LC139	KN1	RV	3.4	6	18.3	D
LC139	KN1	RV	2.3	3.4	159	D
LC139	KN1	RV	0.9	2.3	5160	D
LC154	ML1	LK	6.7	12.2	25800	D
LC154	ML1	LK	2.4	6.7	6810	D
LC154	ML1	LK	0	2.4	3430	D
LC153	MED5	RV	6.9	11	22.7	D
LC153	MED5	RV	3.5	6.9	33.9	D
LC153	MED5	RV	0	3.5	33.7	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Lead (Continued)						
LC153	MED5	RV	11	14.5	16.7	D
LC152	MED4	RV	13.6	16.2	18.6	D
LC152	MED4	RV	1.9	5	21000	D
LC152	MED4	RV	0	1.9	3970	D
LC101	CAT2	RV	0	2.8	4640	D
LC103	CAT4	RV	2	4	2520	D
LC103	CAT4	RV	0	2	2030	D
LC102	CAT3	RV	19.9	22.5	2140	D
LC102	CAT3	RV	17.2	19.9	2000	D
LC102	CAT3	RV	14.6	17.2	2520	D
LC102	CAT3	RV	12.1	14.6	2630	D
LC102	CAT3	RV	9.7	12.1	2630	D
LC102	CAT3	RV	7.2	9.7	2680	D
LC102	CAT3	RV	2.4	4.8	2040	D
LC102	CAT3	RV	0	2.4	2160	D
LC102	CAT3	RV	4.8	7.2	2720	D
LC102	CAT3	RV	22.5	23.4	2630	D
LC101	CAT2	RV	6.1	15.5	2220	D
LC101	CAT2	RV	4.9	6.1	2150	D
LC101	CAT2	RV	2.8	4.9	2570	D
LC111	CN3	RV	0	3.3	3020	D
LC112	CN4	RV	0.8	2.7	5010	D
LC112	CN4	RV	2.7	9.1	246	D
LC118	DEL1	RV	0	3.8	2180	D
LC117	CS5	RV	3.7	6	91.5	D
LC117	CS5	RV	1.9	3.7	31.7	D
LC117	CS5	RV	0	1.9	1480	D
LC116	CS3	RV	5.5	9.1	7680	D
LC116	CS3	RV	2.7	5.5	7190	D
LC116	CS3	RV	0	2.7	5560	D
LC115	CS2	RV	3	6	9600	D

Table C-2 (Continued)
Metals Concentrations in Sediments-Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Lead (Continued)						
LC115	CS2	RV	6	10	1620	D
LC115	CS2	RV	0	3	3630	D
LC114	CS1	RV	3	5	2900	D
LC114	CS1	RV	0	3	3440	D
LC114	CS1	RV	5	9	2180	D
LC118	DEL1	RV	18.8	24.4	60	D
LC118	DEL1	RV	15.6	18.8	17500	D
LC118	DEL1	RV	12.5	15.6	5640	D
LC118	DEL1	RV	7.6	12.5	3860	D
LC118	DEL1	RV	3.8	7.6	3030	D
LC113	CN5	RV	1.8	3.4	19.5	D
LC113	CN5	RV	0.5	1.8	14.8	D
LC111	CN3	RV	3.3	5	2560	D
LC112	CN4	RV	0	0.8	3350	D
LC111	CN3	RV	5	6.6	2800	D
LC180	SWN1	RV	7.8	9.6	37.5	D
LC180	SWN1	RV	5.3	7.8	90.1	D
LC180	SWN1	RV	3	5.3	689	D
LC180	SWN1	RV	0	3	2480	D
LC161	MN4	RV	0	2.8	29.5	D
LC172	SN1	RV	1.7	5.6	22.7	D
LC172	SN1	RV	0	1.7	1560	D
LC171	RL4	LK	0	3.5	40.3	D
LC170	RL3	LK	0	2.5	203	D
LC170	RL3	LK	2.5	10.7	57.9	D
LC169	RL2	LK	4.4	10.9	34.1	D
LC169	RL2	LK	4.4	10.9	43	D
LC169	RL2	LK	0	4.4	350	D
LC168	RL1	LK	2.6	10.3	164	D
LC167	MS5	RV	0	1.6	25.8	D
LC166	MS4	RV	3	4.4	29	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Lead (Continued)						
LC172	SN1	RV	5.6	9.9	5.75	D
LC166	MS4	RV	0	3	26.9	D
LC165	MS3	RV	0.5	2.1	29.9	D
LC165	MS3	RV	0	0.5	5570	D
LC164	MS2	RV	1.2	3.7	69.3	D
LC164	MS2	RV	0	1.2	6730	D
LC163	MS1	RV	3.6	9.5	17.6	D
LC171	RL4	LK	8.5	10.2	22.5	D
LC171	RL4	LK	3.5	8.5	17.1	D
LC168	RL1	LK	0	2.6	188	D
LC167	MS5	RV	1.6	4.8	41.1	D
LC167	MS5	RV	1.6	4.8	23.8	D
LC163	MS1	RV	1.2	3.6	545	D
LC163	MS1	RV	0	1.2	6300	D
LC161	MN4	RV	2.8	8.2	23.9	D
LC162	MN5	RV	2.2	5.9	24.2	D
LC162	MN5	RV	0	2.2	38.8	D
LC180	SWN1	RV	9.6	12.9	18.4	D
LC181	SWN2	RV	0	4.7	5310	D
LC181	SWN2	RV	7.6	9.1	7010	D
LC180	SWN1	RV	12.9	17.5	20.2	D
LC184	SWN5	RV	8	10.8	31.8	D
LC184	SWN5	RV	1.8	8	5180	D
LC183	SWN4	RV	0	2.7	3380	D
LC182	SWN3	RV	1.8	3.4	5500	D
LC182	SWN3	RV	0	1.8	5520	D
LC182	SWN3	RV	9.5	12.5	114	D
LC182	SWN3	RV	7.6	9.5	16700	D
LC182	SWN3	RV	4.8	7.6	9040	D
LC182	SWN3	RV	3.4	4.8	6700	D
LC181	SWN2	RV	13	16.3	18.6	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Lead (Continued)						
LC160	MN3	RV	2.4	8.6	25.8	D
LC160	MN3	RV	0.7	2.4	85.2	D
LC160	MN3	RV	0	0.7	14500	D
LC179	SS5	RV	1.1	4.2	25.4	D
LC179	SS5	RV	0	1.1	3250	D
LC184	SWN5	RV	10.8	13.4	31.2	D
LC184	SWN5	RV	0	1.8	35600	D
LC183	SWN4	RV	13.8	19.8	1200	D
LC183	SWN4	RV	11.3	13.8	14200	D
LC183	SWN4	RV	8.3	11.3	9370	D
LC183	SWN4	RV	5.2	8.3	5910	D
LC183	SWN4	RV	2.7	5.2	5860	D
LC181	SWN2	RV	11.1	13	5790	D
LC181	SWN2	RV	9.1	11.1	10900	D
LC181	SWN2	RV	4.7	7.6	6880	D
LC103	CAT4	RV	6	8	2550	D
LC110	CN2	RV	4.4	8.9	3050	D
LC107	CL3	LK	0	8.5	660	D
LC107	CL3	LK	0	8.5	706	D
LC106	CL2	LK	2.3	3.3	9360	D
LC110	CN2	RV	8.9	13.3	3930	D
LC106	CL2	LK	0	2.3	4230	D
LC105	CL1	LK	6.7	10.3	11.6	D
LC105	CL1	LK	0	6.7	4160	D
LC104	CAT5	RV	0	3.7	2560	D
LC104	CAT5	RV	11	15	14.5	D
LC104	CAT5	RV	7.4	11	20.3	D
LC104	CAT5	RV	3.7	7.4	1590	D
LC110	CN2	RV	0	4.4	2080	D
LC109	CN1	RV	8.5	12.8	461	D
LC109	CN1	RV	3.2	8.5	8730	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Lead (Continued)						
LC109	CN1	RV	0	3.2	2640	D
LC108	CL4	LK	0	3	85.9	D
LC103	CAT4	RV	8	9.6	2220	D
LC103	CAT4	RV	9.6	11.2	2150	D
LC103	CAT4	RV	14.6	17.1	12.1	D
LC103	CAT4	RV	4	6	2180	D
LC103	CAT4	RV	17.1	19.2	11.5	D
LC103	CAT4	RV	12.9	14.6	634	D
LC103	CAT4	RV	11.2	12.9	2270	D
LC125	HAR2	RV	3.3	5.9	9430	D
LC125	HAR2	RV	16.4	20.6	31.2	D
LC126	HAR3	RV	4.5	10.3	16900	D
LC125	HAR2	RV	5.9	7.9	19900	D
LC131	HS1	RV	5	10.2	44	D
LC131	HS1	RV	0	5	2740	D
LC130	HN2	RV	0.8	4.1	5600	D
LC130	HN2	RV	0	0.8	4740	D
LC128	HAR5	RV	6.4	10.5	12.5	D
LC128	HAR5	RV	2.5	6.4	17.2	D
LC128	HAR5	RV	0	2.5	60.7	D
LC127	HAR4	RV	8.9	11.5	102	D
LC127	HAR4	RV	6.7	8.9	9160	D
LC127	HAR4	RV	3.9	6.7	6280	D
LC127	HAR4	RV	0	3.9	3540	D
LC127	HAR4	RV	15.7	20.2	31.9	D
LC126	HAR3	RV	17.2	20.5	24.2	D
LC126	HAR3	RV	14.6	17.2	71.7	D
LC126	HAR3	RV	10.3	14.6	36.5	D
LC129	HN1	RV	2.8	4.9	3870	D
LC129	HN1	RV	0	2.8	2170	D
LC128	HAR5	RV	10.5	14.1	25.3	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Lead (Continued)						
LC127	HAR4	RV	11.5	15.7	40.9	D
LC126	HAR3	RV	2.3	4.5	5960	D
LC126	HAR3	RV	0	2.3	2380	D
LC125	HAR2	RV	10	16.4	48.2	D
LC125	HAR2	RV	7.9	10	17300	D
LC155	ML2	LK	0	0.9	3520	D
LC155	ML2	LK	0.9	6	4240	D
LC121	DS3	RV	0.7	2.9	20.2	D
LC121	DS3	RV	0	0.7	225	D
LC120	DS2	RV	0.8	6.7	50.2	D
LC120	DS2	RV	0	0.8	2380	D
LC158	MN1	RV	2.9	6.2	50.8	D
LC158	MN1	RV	0	2.9	4370	D
LC158	MN1	RV	6.2	9.5	4050	D
LC157	ML4	LK	3.6	8.9	52.5	D
LC157	ML4	LK	0	3.6	934	D
LC156	ML3	LK	0	3.8	6770	D
LC155	ML2	LK	0.9	6	4660	D
LC156	ML3	LK	3.8	7.5	29.8	D
LC125	HAR2	RV	0	3.3	6460	D
LC124	HAR1	RV	0	5.4	15100	D
LC124	HAR1	RV	15.7	20.7	10.7	D
LC124	HAR1	RV	13	15.7	29.1	D
LC124	HAR1	RV	10.5	13	2270	D
LC124	HAR1	RV	8.4	10.5	7340	D
LC124	HAR1	RV	5.4	8.4	4670	D
LC123	DS5	RV	1.3	2.7	21.5	D
LC123	DS5	RV	0	1.3	404	D
LC122	DS4	RV	0.7	2.1	25.7	D
LC122	DS4	RV	0	0.7	1530	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Manganese						
LC146	KS3	RV	1.6	3.3	40.5	D
LC147	KS4	RV	1.2	2.5	104	D
LC148	KS5	RV	0	1	48.6	D
LC147	KS4	RV	0	1.2	510	D
LC150	MED2	RV	15.2	21.2	50.8	D
LC150	MED2	RV	11.8	15.2	1680	D
LC150	MED2	RV	8	11.8	9210	D
LC150	MED2	RV	5.6	8	10100	D
LC150	MED2	RV	2.8	5.6	9870	D
LC150	MED2	RV	0	2.8	10700	D
LC149	MED1	RV	12.4	16.4	113	D
LC149	MED1	RV	10.8	12.4	133	D
LC151	MED3	RV	14.4	20.4	252	D
LC151	MED3	RV	11.2	14.4	298	D
LC151	MED3	RV	9.2	11.2	5830	D
LC151	MED3	RV	2.6	5.7	10100	D
LC151	MED3	RV	0	2.6	8170	D
LC151	MED3	RV	5.7	9.2	9630	D
LC149	MED1	RV	7.8	10.8	2400	D
LC149	MED1	RV	2.7	7.8	10800	D
LC149	MED1	RV	0	2.7	8310	D
LC149	MED1	RV	16.4	20.4	59.4	D
LC148	KS5	RV	1	2.8	33	D
LC133	HS3	RV	5.7	9.5	80.3	D
LC134	HS4	RV	1.7	5.9	76.2	D
LC134	HS4	RV	5.9	9.3	49.2	D
LC134	HS4	RV	0	1.7	2010	D
LC100	CAT1	RV	17.7	19.5	113	D
LC100	CAT1	RV	14.1	17.7	121	D
LC100	CAT1	RV	5.4	14.1	6700	D
LC100	CAT1	RV	2.2	5.4	7060	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Manganese (Continued)						
LC100	CAT1	RV	0	2.2	4530	D
LC138	KL4	LK	5.1	9.7	1500	D
LC138	KL4	LK	0	5.1	372	D
LC137	KL3	LK	4	10.4	662	D
LC137	KL3	LK	4	10.4	555	D
LC137	KL3	LK	0	4	4080	D
LC136	KL2	LK	7.1	10.3	220	D
LC136	KL2	LK	3.7	7.1	7870	D
LC136	KL2	LK	0	3.7	5490	D
LC135	KL1	LK	7.6	11	9810	D
LC135	KL1	LK	4.1	7.6	9330	D
LC135	KL1	LK	0	4.1	8340	D
LC119	DS1	RV	1.9	5.7	368	D
LC119	DS1	RV	1.9	5.7	302	D
LC119	DS1	RV	0	1.9	3850	D
LC159	MN2	RV	1.4	2.9	7030	D
LC175	SS1	RV	1.4	7.4	249	D
LC175	SS1	RV	7.4	8.9	121	D
LC159	MN2	RV	2.9	10.3	158	D
LC144	KS1	RV	2.8	8.8	91.3	D
LC144	KS1	RV	0	2.8	2160	D
LC143	KN5	RV	1.4	3.6	256	D
LC143	KN5	RV	0.6	1.4	595	D
LC142	KN4	RV	1.8	3.5	543	D
LC142	KN4	RV	0.9	1.8	1610	D
LC142	KN4	RV	0	0.9	7530	D
LC141	KN3	RV	3.1	5.1	117	D
LC141	KN3	RV	1.3	3.1	199	D
LC141	KN3	RV	0	1.3	9190	D
LC140	KN2	RV	3.9	9.3	124	D
LC146	KS3	RV	0	1.6	634	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Manganese (Continued)						
LC145	KS2	RV	2.7	5.5	93.8	D
LC145	KS2	RV	0	2.7	507	D
LC140	KN2	RV	3.9	9.3	2620	D
LC140	KN2	RV	1.8	3.9	84.7	D
LC140	KN2	RV	0	1.8	3850	D
LC178	SS4	RV	0.9	3.5	134	D
LC143	KN5	RV	0	0.6	1420	D
LC178	SS4	RV	0	0.9	741	D
LC177	SS3	RV	0.8	4.5	297	D
LC177	SS3	RV	0	0.8	2190	D
LC176	SS2	RV	2.2	5.8	201	D
LC176	SS2	RV	0	2.2	7520	D
LC175	SS1	RV	0	1.4	7570	D
LC152	MED4	RV	9.3	11.2	324	D
LC139	KN1	RV	3.4	6	148	D
LC139	KN1	RV	2.3	3.4	811	D
LC139	KN1	RV	0.9	2.3	8490	D
LC154	ML1	LK	6.7	12.2	5960	D
LC154	ML1	LK	2.4	6.7	10600	D
LC154	ML1	LK	0	2.4	7630	D
LC153	MED5	RV	6.9	11	243	D
LC153	MED5	RV	3.5	6.9	210	D
LC153	MED5	RV	0	3.5	190	D
LC153	MED5	RV	11	14.5	70.3	D
LC155	ML2	LK	0.9	6	9170	D
LC155	ML2	LK	0.9	6	8790	D
LC155	ML2	LK	0	0.9	5750	D
LC152	MED4	RV	13.6	16.2	208	D
LC152	MED4	RV	11.2	13.6	230	D
LC152	MED4	RV	5	9.3	4630	D
LC152	MED4	RV	0	1.9	4600	D

Table C-2 (Continued)
Metals Concentrations in Sediments-Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Manganese (Continued)						
LC152	MED4	RV	1.9	5	8020	D
LC101	CAT2	RV	0	2.8	4930	D
LC103	CAT4	RV	2	4	5720	D
LC103	CAT4	RV	0	2	3870	D
LC102	CAT3	RV	19.9	22.5	8580	D
LC102	CAT3	RV	17.2	19.9	7400	D
LC102	CAT3	RV	14.6	17.2	7900	D
LC102	CAT3	RV	12.1	14.6	7980	D
LC102	CAT3	RV	9.7	12.1	6970	D
LC102	CAT3	RV	7.2	9.7	6330	D
LC102	CAT3	RV	4.8	7.2	5470	D
LC102	CAT3	RV	2.4	4.8	3130	D
LC102	CAT3	RV	0	2.4	5740	D
LC103	CAT4	RV	8	9.6	7390	D
LC103	CAT4	RV	6	8	6620	D
LC102	CAT3	RV	22.5	23.4	8330	D
LC101	CAT2	RV	2.8	4.9	3960	D
LC101	CAT2	RV	6.1	15.5	3970	D
LC101	CAT2	RV	4.9	6.1	4010	D
LC112	CN4	RV	2.7	9.1	1010	D
LC118	DEL1	RV	18.8	24.4	109	D
LC118	DEL1	RV	15.6	18.8	6760	D
LC118	DEL1	RV	12.5	15.6	8060	D
LC118	DEL1	RV	7.6	12.5	5970	D
LC118	DEL1	RV	3.8	7.6	7020	D
LC118	DEL1	RV	0	3.8	7210	D
LC117	CS5	RV	3.7	6	101	D
LC117	CS5	RV	1.9	3.7	71.6	D
LC117	CS5	RV	0	1.9	1030	D
LC116	CS3	RV	5.5	9.1	7810	D
LC116	CS3	RV	2.7	5.5	7260	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Manganese (Continued)						
LC116	CS3	RV	0	2.7	6850	D
LC115	CS2	RV	6	10	544	D
LC115	CS2	RV	3	6	8280	D
LC113	CN5	RV	0.5	1.8	49.2	D
LC113	CN5	RV	1.8	3.4	128	D
LC114	CS1	RV	3	5	6750	D
LC115	CS2	RV	0	3	4590	D
LC114	CS1	RV	0	3	3380	D
LC114	CS1	RV	5	9	8490	D
LC180	SWN1	RV	7.8	9.6	160	D
LC180	SWN1	RV	5.3	7.8	188	D
LC180	SWN1	RV	3	5.3	440	D
LC180	SWN1	RV	0	3	977	D
LC180	SWN1	RV	12.9	17.5	234	D
LC180	SWN1	RV	9.6	12.9	96.6	D
LC163	MS1	RV	0	1.2	5230	D
LC164	MS2	RV	1.2	3.7	82.5	D
LC173	SN2	RV	1.9	9.5	155	D
LC173	SN2	RV	0	1.9	756	D
LC172	SN1	RV	5.6	9.9	90.7	D
LC172	SN1	RV	1.7	5.6	141	D
LC172	SN1	RV	0	1.7	2130	D
LC171	RL4	LK	8.5	10.2	196	D
LC171	RL4	LK	3.5	8.5	125	D
LC171	RL4	LK	0	3.5	279	D
LC170	RL3	LK	0	2.5	401	D
LC170	RL3	LK	2.5	10.7	313	D
LC169	RL2	LK	4.4	10.9	292	D
LC169	RL2	LK	4.4	10.9	343	D
LC169	RL2	LK	0	4.4	434	D
LC168	RL1	LK	2.6	10.3	250	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Manganese (Continued)						
LC168	RL1	LK	0	2.6	526	D
LC167	MS5	RV	1.6	4.8	140	D
LC167	MS5	RV	1.6	4.8	150	D
LC167	MS5	RV	0	1.6	121	D
LC166	MS4	RV	3	4.4	169	D
LC166	MS4	RV	0	3	120	D
LC159	MN2	RV	0	1.4	3150	D
LC174	SN3	RV	3.5	6.7	98.2	D
LC174	SN3	RV	0	3.5	25.5	D
LC165	MS3	RV	0.5	2.1	179	D
LC165	MS3	RV	0	0.5	974	D
LC163	MS1	RV	3.6	9.5	165	D
LC163	MS1	RV	1.2	3.6	389	D
LC164	MS2	RV	0	1.2	8680	D
LC181	SWN2	RV	0	4.7	8350	D
LC162	MN5	RV	2.2	5.9	49.7	D
LC162	MN5	RV	0	2.2	113	D
LC161	MN4	RV	2.8	8.2	137	D
LC161	MN4	RV	0	2.8	57.4	D
LC181	SWN2	RV	7.6	9.1	9880	D
LC181	SWN2	RV	9.1	11.1	11100	D
LC181	SWN2	RV	11.1	13	1760	D
LC181	SWN2	RV	13	16.3	55.7	D
LC182	SWN3	RV	3.4	4.8	10300	D
LC184	SWN5	RV	8	10.8	73.6	D
LC184	SWN5	RV	1.8	8	827	D
LC184	SWN5	RV	0	1.8	5160	D
LC183	SWN4	RV	13.8	19.8	108	D
LC183	SWN4	RV	11.3	13.8	7890	D
LC183	SWN4	RV	8.3	11.3	10200	D
LC183	SWN4	RV	5.2	8.3	7860	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Manganese (Continued)						
LC183	SWN4	RV	2.7	5.2	8750	D
LC160	MN3	RV	2.4	8.6	85.2	D
LC160	MN3	RV	0.7	2.4	166	D
LC160	MN3	RV	0	0.7	5450	D
LC179	SS5	RV	1.1	4.2	76.8	D
LC179	SS5	RV	0	1.1	2350	D
LC184	SWN5	RV	10.8	13.4	85.5	D
LC183	SWN4	RV	0	2.7	7770	D
LC182	SWN3	RV	1.8	3.4	9620	D
LC182	SWN3	RV	0	1.8	9570	D
LC182	SWN3	RV	4.8	7.6	10100	D
LC182	SWN3	RV	9.5	12.5	46	D
LC182	SWN3	RV	7.6	9.5	8570	D
LC181	SWN2	RV	4.7	7.6	9400	D
LC103	CAT4	RV	9.6	11.2	8920	D
LC103	CAT4	RV	12.9	14.6	1540	D
LC103	CAT4	RV	11.2	12.9	9790	D
LC110	CN2	RV	8.9	13.3	10400	D
LC108	CL4	LK	0	3	294	D
LC107	CL3	LK	0	8.5	471	D
LC107	CL3	LK	0	8.5	421	D
LC106	CL2	LK	2.3	3.3	3090	D
LC106	CL2	LK	0	2.3	3030	D
LC105	CL1	LK	6.7	10.3	127	D
LC105	CL1	LK	0	6.7	1810	D
LC104	CAT5	RV	0	3.7	4480	D
LC111	CN3	RV	3.3	5	7850	D
LC111	CN3	RV	0	3.3	8740	D
LC110	CN2	RV	4.4	8.9	7210	D
LC110	CN2	RV	0	4.4	6850	D
LC109	CN1	RV	8.5	12.8	760	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Manganese (Continued)						
LC109	CN1	RV	3.2	8.5	8990	D
LC109	CN1	RV	0	3.2	7020	D
LC104	CAT5	RV	11	15	141	D
LC104	CAT5	RV	7.4	11	149	D
LC104	CAT5	RV	3.7	7.4	6180	D
LC103	CAT4	RV	4	6	4510	D
LC112	CN4	RV	0.8	2.7	8160	D
LC112	CN4	RV	0	0.8	8310	D
LC111	CN3	RV	5	6.6	7820	D
LC103	CAT4	RV	17.1	19.2	64	D
LC103	CAT4	RV	14.6	17.1	72.9	D
LC125	HAR2	RV	10	16.4	173	D
LC126	HAR3	RV	4.5	10.3	8860	D
LC126	HAR3	RV	0	2.3	9280	D
LC126	HAR3	RV	2.3	4.5	8770	D
LC126	HAR3	RV	10.3	14.6	171	D
LC125	HAR2	RV	16.4	20.6	140	D
LC132	HS2	RV	1.6	5.4	114	D
LC132	HS2	RV	0	1.6	4690	D
LC131	HS1	RV	0	5	1470	D
LC131	HS1	RV	5	10.2	130	D
LC131	HS1	RV	0	5	2520	D
LC130	HN2	RV	0.8	4.1	8740	D
LC130	HN2	RV	0	0.8	8070	D
LC129	HN1	RV	2.8	4.9	9160	D
LC129	HN1	RV	0	2.8	8290	D
LC128	HAR5	RV	10.5	14.1	152	D
LC128	HAR5	RV	6.4	10.5	72.6	D
LC128	HAR5	RV	2.5	6.4	52.6	D
LC128	HAR5	RV	0	2.5	167	D
LC127	HAR4	RV	11.5	15.7	144	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Manganese (Continued)						
LC127	HAR4	RV	8.9	11.5	127	D
LC127	HAR4	RV	6.7	8.9	6170	D
LC133	HS3	RV	1.9	5.7	1190	D
LC133	HS3	RV	0	1.9	426	D
LC132	HS2	RV	5.4	9.5	177	D
LC127	HAR4	RV	3.9	6.7	7650	D
LC127	HAR4	RV	0	3.9	7350	D
LC127	HAR4	RV	15.7	20.2	140	D
LC126	HAR3	RV	17.2	20.5	141	D
LC126	HAR3	RV	14.6	17.2	184	D
LC156	ML3	LK	0	3.8	6640	D
LC121	DS3	RV	0.7	2.9	145	D
LC121	DS3	RV	0	0.7	245	D
LC120	DS2	RV	0.8	6.7	304	D
LC120	DS2	RV	0	0.8	2800	D
LC158	MN1	RV	2.9	6.2	71.3	D
LC158	MN1	RV	0	2.9	9860	D
LC158	MN1	RV	6.2	9.5	9000	D
LC157	ML4	LK	3.6	8.9	215	D
LC125	HAR2	RV	7.9	10	4070	D
LC125	HAR2	RV	5.9	7.9	7580	D
LC125	HAR2	RV	3.3	5.9	9430	D
LC125	HAR2	RV	0	3.3	9490	D
LC124	HAR1	RV	5.4	8.4	2690	D
LC124	HAR1	RV	0	5.4	8860	D
LC123	DS5	RV	1.3	2.7	202	D
LC123	DS5	RV	0	1.3	268	D
LC122	DS4	RV	0.7	2.1	62	D
LC122	DS4	RV	0	0.7	1410	D
LC156	ML3	LK	3.8	7.5	173	D
LC157	ML4	LK	0	3.6	1630	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Manganese (Continued)						
LC124	HAR1	RV	15.7	20.7	58.3	D
LC124	HAR1	RV	13	15.7	87.1	D
LC124	HAR1	RV	10.5	13	882	D
LC124	HAR1	RV	8.4	10.5	2970	D
Mercury						
LC157	ML4	LK	0	3.6	1.64	D
LC122	DS4	RV	0	0.7	0.84	D
LC158	MN1	RV	6.2	9.5	3.4	D
LC125	HAR2	RV	3.3	5.9	3.04	D
LC125	HAR2	RV	0	3.3	3.02	D
LC125	HAR2	RV	7.9	10	6.42	D
LC125	HAR2	RV	5.9	7.9	3.77	D
LC120	DS2	RV	0	0.8	2.7	D
LC124	HAR1	RV	8.4	10.5	1.61	D
LC124	HAR1	RV	5.4	8.4	2.26	D
LC124	HAR1	RV	0	5.4	5.86	D
LC158	MN1	RV	0	2.9	4	D
LC126	HAR3	RV	4.5	10.3	6.5	D
LC126	HAR3	RV	0	2.3	2.63	D
LC132	HS2	RV	0	1.6	2.03	D
LC131	HS1	RV	0	5	1.61	D
LC131	HS1	RV	0	5	1.57	D
LC130	HN2	RV	0.8	4.1	3.45	D
LC130	HN2	RV	0	0.8	3.13	D
LC129	HN1	RV	2.8	4.9	3.91	D
LC129	HN1	RV	0	2.8	1.66	D
LC127	HAR4	RV	6.7	8.9	3.16	D
LC127	HAR4	RV	3.9	6.7	3.37	D
LC127	HAR4	RV	0	3.9	3	D
LC126	HAR3	RV	2.3	4.5	3.59	D
LC103	CAT4	RV	9.6	11.2	5.31	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Mercury (Continued)						
LC103	CAT4	RV	11.2	12.9	2.52	D
LC111	CN3	RV	3.3	5	2.83	D
LC111	CN3	RV	0	3.3	2.98	D
LC110	CN2	RV	8.9	13.3	3.74	D
LC110	CN2	RV	4.4	8.9	2.29	D
LC110	CN2	RV	0	4.4	1.71	D
LC109	CN1	RV	8.5	12.8	1.48	D
LC109	CN1	RV	3.2	8.5	5.22	D
LC109	CN1	RV	0	3.2	1.82	D
LC106	CL2	LK	2.3	3.3	0.693	D
LC112	CN4	RV	0	0.8	1.77	D
LC111	CN3	RV	5	6.6	2.34	D
LC106	CL2	LK	0	2.3	1.12	D
LC105	CL1	LK	0	6.7	1.77	D
LC104	CAT5	RV	0	3.7	6.19	D
LC104	CAT5	RV	3.7	7.4	5.61	D
LC103	CAT4	RV	4	6	2.12	D
LC181	SWN2	RV	9.1	11.1	4.7	D
LC160	MN3	RV	0	0.7	7.9	D
LC179	SS5	RV	0	1.1	2.84	D
LC184	SWN5	RV	8	10.8	0.286	D
LC163	MS1	RV	1.2	3.6	0.198	D
LC163	MS1	RV	0	1.2	3.6	D
LC184	SWN5	RV	1.8	8	2.97	D
LC184	SWN5	RV	0	1.8	6.15	D
LC183	SWN4	RV	13.8	19.8	0.214	D
LC183	SWN4	RV	11.3	13.8	4.91	D
LC183	SWN4	RV	8.3	11.3	4.07	D
LC183	SWN4	RV	5.2	8.3	3.12	D
LC183	SWN4	RV	2.7	5.2	3.09	D
LC160	MN3	RV	0.7	2.4	0.21	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Mercury (Continued)						
LC181	SWN2	RV	11.1	13	1.02	D
LC182	SWN3	RV	3.4	4.8	2.87	D
LC182	SWN3	RV	0	1.8	2.72	D
LC183	SWN4	RV	0	2.7	1.24	D
LC182	SWN3	RV	1.8	3.4	2.6	D
LC182	SWN3	RV	4.8	7.6	3.11	D
LC182	SWN3	RV	7.6	9.5	6.08	D
LC164	MS2	RV	0	1.2	3.3	D
LC159	MN2	RV	0	1.4	3.6	D
LC172	SN1	RV	0	1.7	0.401	D
LC165	MS3	RV	0	0.5	2.57	D
LC181	SWN2	RV	7.6	9.1	3.36	D
LC181	SWN2	RV	0	4.7	2.06	D
LC181	SWN2	RV	4.7	7.6	3.11	D
LC180	SWN1	RV	3	5.3	0.635	D
LC180	SWN1	RV	0	3	1.03	D
LC112	CN4	RV	0.8	2.7	2.45	D
LC118	DEL1	RV	15.6	18.8	6.34	D
LC118	DEL1	RV	12.5	15.6	2.7	D
LC118	DEL1	RV	7.6	12.5	3.16	D
LC118	DEL1	RV	3.8	7.6	2.22	D
LC118	DEL1	RV	0	3.8	2.2	D
LC117	CS5	RV	0	1.9	1.23	D
LC116	CS3	RV	5.5	9.1	4.8	D
LC116	CS3	RV	2.7	5.5	5.16	D
LC116	CS3	RV	0	2.7	3.49	D
LC115	CS2	RV	3	6	6.75	D
LC115	CS2	RV	0	3	5.42	D
LC114	CS1	RV	3	5	3.36	D
LC114	CS1	RV	0	3	3.97	D
LC114	CS1	RV	5	9	1.99	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Mercury (Continued)						
LC101	CAT2	RV	0	2.8	1.9	D
LC103	CAT4	RV	2	4	0.333	D
LC102	CAT3	RV	19.9	22.5	1.39	D
LC102	CAT3	RV	17.2	19.9	1.55	D
LC102	CAT3	RV	14.6	17.2	2.76	D
LC102	CAT3	RV	12.1	14.6	2.57	D
LC102	CAT3	RV	9.7	12.1	2.07	D
LC102	CAT3	RV	7.2	9.7	1.1	D
LC102	CAT3	RV	2.4	4.8	1.87	D
LC103	CAT4	RV	8	9.6	2.73	D
LC102	CAT3	RV	0	2.4	1.83	D
LC102	CAT3	RV	4.8	7.2	2.26	D
LC101	CAT2	RV	2.8	4.9	1	D
LC101	CAT2	RV	6.1	15.5	1.1	D
LC102	CAT3	RV	22.5	23.4	1.22	D
LC101	CAT2	RV	4.9	6.1	1.1	D
LC152	MED4	RV	9.3	11.2	0.289	D
LC152	MED4	RV	1.9	5	3.8	D
LC152	MED4	RV	5	9.3	5.71	D
LC155	ML2	LK	0.9	6	2.98	D
LC155	ML2	LK	0.9	6	2.91	D
LC155	ML2	LK	0	0.9	4.1	D
LC139	KN1	RV	0.9	2.3	4	D
LC154	ML1	LK	6.7	12.2	6.37	D
LC154	ML1	LK	2.4	6.7	2.7	D
LC154	ML1	LK	0	2.4	2.01	D
LC156	ML3	LK	0	3.8	2.51	D
LC153	MED5	RV	3.5	6.9	0.195	D
LC152	MED4	RV	0	1.9	1.38	D
LC159	MN2	RV	1.4	2.9	3.5	D
LC175	SS1	RV	0	1.4	2.51	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Mercury (Continued)						
LC146	KS3	RV	0	1.6	0.68	D
LC145	KS2	RV	0	2.7	0.356	D
LC144	KS1	RV	0	2.8	4.6	D
LC143	KN5	RV	0	0.6	3.72	D
LC142	KN4	RV	1.8	3.5	0.76	D
LC142	KN4	RV	0.9	1.8	2.9	D
LC142	KN4	RV	0	0.9	3.54	D
LC141	KN3	RV	1.3	3.1	0.516	D
LC141	KN3	RV	0	1.3	4.5	D
LC140	KN2	RV	0	1.8	4.1	D
LC178	SS4	RV	0	0.9	0.729	D
LC177	SS3	RV	0	0.8	0.938	D
LC176	SS2	RV	0	2.2	4.38	D
LC159	MN2	RV	2.9	10.3	0.24	D
LC134	HS4	RV	0	1.7	1.94	D
LC135	KL1	LK	7.6	11	3.18	D
LC135	KL1	LK	4.1	7.6	3.92	D
LC100	CAT1	RV	2.2	5.4	1.6	D
LC100	CAT1	RV	0	2.2	1.2	D
LC138	KL4	LK	5.1	9.7	1.02	D
LC137	KL3	LK	0	4	3.53	D
LC136	KL2	LK	3.7	7.1	6.12	D
LC136	KL2	LK	0	3.7	4.42	D
LC135	KL1	LK	0	4.1	2.81	D
LC119	DS1	RV	1.9	5.7	0.32	D
LC119	DS1	RV	0	1.9	3	D
LC100	CAT1	RV	5.4	14.1	1.6	D
LC147	KS4	RV	0	1.2	0.85	D
LC149	MED1	RV	10.8	12.4	1.04	D
LC149	MED1	RV	7.8	10.8	6.15	D
LC151	MED3	RV	9.2	11.2	6.57	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Mercury (Continued)						
LC151	MED3	RV	5.7	9.2	2.78	D
LC151	MED3	RV	2.6	5.7	3.07	D
LC151	MED3	RV	0	2.6	2.46	D
LC150	MED2	RV	11.8	15.2	0.61	D
LC150	MED2	RV	8	11.8	3.81	D
LC150	MED2	RV	5.6	8	1.35	D
LC150	MED2	RV	2.8	5.6	1.37	D
LC150	MED2	RV	0	2.8	3.12	D
LC149	MED1	RV	2.7	7.8	2.28	D
LC149	MED1	RV	0	2.7	2.11	D
LC147	KS4	RV	1.2	2.5	0.16	ND
LC149	MED1	RV	12.4	16.4	0.132	ND
LC148	KS5	RV	0	1	0.17	ND
LC151	MED3	RV	14.4	20.4	0.125	ND
LC151	MED3	RV	11.2	14.4	0.121	ND
LC150	MED2	RV	15.2	21.2	0.131	ND
LC149	MED1	RV	16.4	20.4	0.139	ND
LC148	KS5	RV	1	2.8	0.21	ND
LC134	HS4	RV	1.7	5.9	0.132	ND
LC119	DS1	RV	1.9	5.7	0.12	ND
LC137	KL3	LK	4	10.4	0.465	ND
LC100	CAT1	RV	14.1	17.7	0.12	ND
LC100	CAT1	RV	17.7	19.5	0.12	ND
LC137	KL3	LK	4	10.4	0.488	ND
LC138	KL4	LK	0	5.1	0.348	ND
LC136	KL2	LK	7.1	10.3	0.413	ND
LC134	HS4	RV	5.9	9.3	0.129	ND
LC175	SS1	RV	1.4	7.4	0.137	ND
LC145	KS2	RV	2.7	5.5	0.148	ND
LC144	KS1	RV	2.8	8.8	0.13	ND
LC143	KN5	RV	1.4	3.6	0.136	ND

Table C-2 (Continued)
Metals Concentrations in Sediments-Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Mercury (Continued)						
LC143	KN5	RV	0.6	1.4	0.206	ND
LC141	KN3	RV	3.1	5.1	0.12	ND
LC146	KS3	RV	1.6	3.3	0.128	ND
LC140	KN2	RV	3.9	9.3	0.13	ND
LC140	KN2	RV	3.9	9.3	0.127	ND
LC177	SS3	RV	0.8	4.5	0.123	ND
LC176	SS2	RV	2.2	5.8	0.117	ND
LC140	KN2	RV	1.8	3.9	0.14	ND
LC178	SS4	RV	0.9	3.5	0.149	ND
LC175	SS1	RV	7.4	8.9	0.129	ND
LC152	MED4	RV	11.2	13.6	0.141	ND
LC139	KN1	RV	3.4	6	0.12	ND
LC139	KN1	RV	2.3	3.4	0.12	ND
LC153	MED5	RV	11	14.5	0.129	ND
LC153	MED5	RV	6.9	11	0.142	ND
LC153	MED5	RV	0	3.5	0.123	ND
LC152	MED4	RV	13.6	16.2	0.139	ND
LC103	CAT4	RV	0	2	0.12	ND
LC103	CAT4	RV	6	8	0.132	ND
LC112	CN4	RV	2.7	9.1	0.121	ND
LC113	CN5	RV	0.5	1.8	0.17	ND
LC117	CS5	RV	1.9	3.7	0.124	ND
LC118	DEL1	RV	18.8	24.4	0.146	ND
LC117	CS5	RV	3.7	6	0.119	ND
LC113	CN5	RV	1.8	3.4	0.142	ND
LC115	CS2	RV	6	10	0.133	ND
LC180	SWN1	RV	5.3	7.8	0.143	ND
LC180	SWN1	RV	7.8	9.6	0.134	ND
LC180	SWN1	RV	9.6	12.9	0.127	ND
LC180	SWN1	RV	12.9	17.5	0.121	ND
LC163	MS1	RV	3.6	9.5	0.132	ND

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Mercury (Continued)						
LC173	SN2	RV	1.9	9.5	0.145	ND
LC173	SN2	RV	0	1.9	0.216	ND
LC172	SN1	RV	5.6	9.9	0.17	ND
LC172	SN1	RV	1.7	5.6	0.124	ND
LC171	RL4	LK	8.5	10.2	0.4	ND
LC171	RL4	LK	3.5	8.5	0.28	ND
LC169	RL2	LK	4.4	10.9	0.33	ND
LC169	RL2	LK	0	4.4	0.88	ND
LC168	RL1	LK	2.6	10.3	0.855	ND
LC168	RL1	LK	0	2.6	0.909	ND
LC167	MS5	RV	1.6	4.8	0.133	ND
LC167	MS5	RV	1.6	4.8	0.136	ND
LC167	MS5	RV	0	1.6	0.119	ND
LC166	MS4	RV	3	4.4	0.139	ND
LC174	SN3	RV	3.5	6.7	0.322	ND
LC174	SN3	RV	0	3.5	0.227	ND
LC171	RL4	LK	0	3.5	0.71	ND
LC170	RL3	LK	0	2.5	0.85	ND
LC170	RL3	LK	2.5	10.7	0.453	ND
LC169	RL2	LK	4.4	10.9	0.32	ND
LC166	MS4	RV	0	3	0.127	ND
LC164	MS2	RV	1.2	3.7	0.13	ND
LC165	MS3	RV	0.5	2.1	0.137	ND
LC181	SWN2	RV	13	16.3	0.126	ND
LC162	MN5	RV	2.2	5.9	0.14	ND
LC162	MN5	RV	0	2.2	0.16	ND
LC161	MN4	RV	2.8	8.2	0.13	ND
LC161	MN4	RV	0	2.8	0.15	ND
LC160	MN3	RV	2.4	8.6	0.13	ND
LC179	SS5	RV	1.1	4.2	0.125	ND
LC184	SWN5	RV	10.8	13.4	0.141	ND

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Mercury (Continued)						
LC182	SWN3	RV	9.5	12.5	0.115	ND
LC103	CAT4	RV	12.9	14.6	0.132	ND
LC107	CL3	LK	0	8.5	0.29	ND
LC107	CL3	LK	0	8.5	0.303	ND
LC108	CL4	LK	0	3	0.16	ND
LC105	CL1	LK	6.7	10.3	0.117	ND
LC103	CAT4	RV	14.6	17.1	0.124	ND
LC104	CAT5	RV	11	15	0.146	ND
LC104	CAT5	RV	7.4	11	0.146	ND
LC103	CAT4	RV	17.1	19.2	0.121	ND
LC126	HAR3	RV	10.3	14.6	0.145	ND
LC128	HAR5	RV	0	2.5	0.135	ND
LC128	HAR5	RV	6.4	10.5	0.138	ND
LC133	HS3	RV	1.9	5.7	0.125	ND
LC133	HS3	RV	0	1.9	0.134	ND
LC132	HS2	RV	5.4	9.5	0.133	ND
LC132	HS2	RV	1.6	5.4	0.133	ND
LC131	HS1	RV	5	10.2	0.142	ND
LC128	HAR5	RV	10.5	14.1	0.148	ND
LC128	HAR5	RV	2.5	6.4	0.13	ND
LC127	HAR4	RV	11.5	15.7	0.147	ND
LC126	HAR3	RV	17.2	20.5	0.148	ND
LC127	HAR4	RV	15.7	20.2	0.148	ND
LC127	HAR4	RV	8.9	11.5	0.151	ND
LC126	HAR3	RV	14.6	17.2	0.159	ND
LC133	HS3	RV	5.7	9.5	0.136	ND
LC156	ML3	LK	3.8	7.5	0.323	ND
LC157	ML4	LK	3.6	8.9	0.271	ND
LC125	HAR2	RV	16.4	20.6	0.153	ND
LC125	HAR2	RV	10	16.4	0.152	ND
LC124	HAR1	RV	15.7	20.7	0.133	ND

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Mercury (Continued)						
LC124	HAR1	RV	13	15.7	0.136	ND
LC124	HAR1	RV	10.5	13	0.136	ND
LC123	DS5	RV	1.3	2.7	0.13	ND
LC123	DS5	RV	0	1.3	0.19	ND
LC122	DS4	RV	0.7	2.1	0.15	ND
LC121	DS3	RV	0.7	2.9	0.13	ND
LC121	DS3	RV	0	0.7	0.15	ND
LC120	DS2	RV	0.8	6.7	0.12	ND
LC158	MN1	RV	2.9	6.2	0.13	ND
Silver						
LC182	SWN3	RV	0	1.8	12.7	D
LC179	SS5	RV	0	1.1	8.07	D
LC184	SWN5	RV	1.8	8	16	D
LC184	SWN5	RV	0	1.8	84.7	D
LC183	SWN4	RV	11.3	13.8	31.5	D
LC183	SWN4	RV	8.3	11.3	21.4	D
LC183	SWN4	RV	5.2	8.3	17.6	D
LC183	SWN4	RV	2.7	5.2	13.6	D
LC183	SWN4	RV	0	2.7	10.5	D
LC165	MS3	RV	0	0.5	17.1	D
LC164	MS2	RV	0	1.2	16.8	D
LC163	MS1	RV	1.2	3.6	1.59	D
LC163	MS1	RV	0	1.2	16.4	D
LC160	MN3	RV	0	0.7	41.5	D
LC182	SWN3	RV	1.8	3.4	14.7	D
LC172	SN1	RV	0	1.7	5.54	D
LC175	SS1	RV	0	1.4	15.7	D
LC159	MN2	RV	1.4	2.9	17.7	D
LC159	MN2	RV	0	1.4	12.6	D
LC180	SWN1	RV	9.6	12.9	0.243	D
LC180	SWN1	RV	3	5.3	0.953	D

Table C-2 (Continued)
Metals Concentrations in Sediments-Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/ Nondetected (ND)
Silver (Continued)						
LC180	SWN1	RV	0	3	4.88	D
LC182	SWN3	RV	7.6	9.5	36.6	D
LC182	SWN3	RV	4.8	7.6	21.9	D
LC181	SWN2	RV	11.1	13	14.8	D
LC181	SWN2	RV	9.1	11.1	27.9	D
LC181	SWN2	RV	7.6	9.1	17.6	D
LC181	SWN2	RV	0	4.7	13.5	D
LC181	SWN2	RV	4.7	7.6	18.3	D
LC180	SWN1	RV	12.9	17.5	0.261	D
LC180	SWN1	RV	7.8	9.6	0.272	D
LC180	SWN1	RV	5.3	7.8	0.366	D
LC182	SWN3	RV	3.4	4.8	19.7	D
LC181	SWN2	RV	13	16.3	0.243	D
LC114	CS1	RV	0	3	10.4	D
LC118	DEL1	RV	15.6	18.8	46.2	D
LC118	DEL1	RV	12.5	15.6	14	D
LC118	DEL1	RV	7.6	12.5	9.79	D
LC118	DEL1	RV	3.8	7.6	10.4	D
LC118	DEL1	RV	0	3.8	8.41	D
LC117	CS5	RV	0	1.9	5.57	D
LC116	CS3	RV	5.5	9.1	19.7	D
LC116	CS3	RV	2.7	5.5	19	D
LC116	CS3	RV	0	2.7	16.1	D
LC114	CS1	RV	3	5	13.7	D
LC115	CS2	RV	0	3	12.8	D
LC115	CS2	RV	6	10	5.87	D
LC115	CS2	RV	3	6	27.7	D
LC101	CAT2	RV	0	2.8	11.3	D
LC103	CAT4	RV	2	4	8.91	D
LC103	CAT4	RV	0	2	6.5	D
LC102	CAT3	RV	19.9	22.5	14.3	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Silver (Continued)						
LC102	CAT3	RV	17.2	19.9	13.1	D
LC102	CAT3	RV	14.6	17.2	15.5	D
LC102	CAT3	RV	12.1	14.6	14.7	D
LC102	CAT3	RV	9.7	12.1	13.6	D
LC102	CAT3	RV	7.2	9.7	12.2	D
LC103	CAT4	RV	12.9	14.6	1.66	D
LC103	CAT4	RV	11.2	12.9	13.7	D
LC103	CAT4	RV	9.6	11.2	13.7	D
LC103	CAT4	RV	8	9.6	15.4	D
LC103	CAT4	RV	6	8	16.3	D
LC103	CAT4	RV	4	6	9.37	D
LC101	CAT2	RV	2.8	4.9	9	D
LC101	CAT2	RV	6.1	15.5	8	D
LC102	CAT3	RV	0	2.4	13.9	D
LC102	CAT3	RV	4.8	7.2	10.8	D
LC102	CAT3	RV	2.4	4.8	10	D
LC102	CAT3	RV	22.5	23.4	13.1	D
LC101	CAT2	RV	4.9	6.1	7.8	D
LC152	MED4	RV	9.3	11.2	0.977	D
LC152	MED4	RV	0	1.9	8.18	D
LC153	MED5	RV	3.5	6.9	0.276	D
LC153	MED5	RV	0	3.5	0.269	D
LC156	ML3	LK	0	3.8	16.5	D
LC155	ML2	LK	0.9	6	14.1	D
LC155	ML2	LK	0.9	6	13.5	D
LC155	ML2	LK	0	0.9	11.6	D
LC139	KN1	RV	2.3	3.4	0.31	D
LC139	KN1	RV	0.9	2.3	17.5	D
LC154	ML1	LK	6.7	12.2	68.2	D
LC154	ML1	LK	2.4	6.7	18.1	D
LC154	ML1	LK	0	2.4	11.7	D

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Silver (Continued)						
LC153	MED5	RV	6.9	11	0.278	D
LC157	ML4	LK	0	3.6	3.54	D
LC153	MED5	RV	11	14.5	0.268	D
LC152	MED4	RV	13.6	16.2	0.284	D
LC152	MED4	RV	11.2	13.6	0.269	D
LC152	MED4	RV	5	9.3	45.9	D
LC152	MED4	RV	1.9	5	50.4	D
LC176	SS2	RV	0	2.2	20.3	D
LC147	KS4	RV	0	1.2	4.2	D
LC146	KS3	RV	0	1.6	2.6	D
LC145	KS2	RV	0	2.7	1.76	D
LC144	KS1	RV	0	2.8	38.7	D
LC143	KN5	RV	0	0.6	21.6	D
LC142	KN4	RV	0.9	1.8	4.77	D
LC142	KN4	RV	0	0.9	14.4	D
LC141	KN3	RV	0	1.3	18.5	D
LC140	KN2	RV	0	1.8	23.8	D
LC178	SS4	RV	0	0.9	2.22	D
LC177	SS3	RV	0	0.8	3.95	D
LC119	DS1	RV	0	1.9	10.2	D
LC100	CAT1	RV	5.4	14.1	36.8	D
LC100	CAT1	RV	2.2	5.4	13.9	D
LC100	CAT1	RV	0	2.2	6.9	D
LC138	KL4	LK	5.1	9.7	5.02	D
LC137	KL3	LK	0	4	9.7	D
LC136	KL2	LK	3.7	7.1	30.8	D
LC136	KL2	LK	0	3.7	13.9	D
LC135	KL1	LK	7.6	11	17.7	D
LC119	DS1	RV	1.9	5.7	0.54	D
LC135	KL1	LK	4.1	7.6	19.6	D
LC135	KL1	LK	0	4.1	13.1	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Silver (Continued)						
LC149	MED1	RV	0	2.7	14.9	D
LC150	MED2	RV	0	2.8	15.1	D
LC151	MED3	RV	11.2	14.4	2.67	D
LC151	MED3	RV	9.2	11.2	77.8	D
LC151	MED3	RV	2.6	5.7	16.2	D
LC151	MED3	RV	0	2.6	12.4	D
LC151	MED3	RV	5.7	9.2	20.2	D
LC150	MED2	RV	11.8	15.2	7.26	D
LC150	MED2	RV	8	11.8	21	D
LC150	MED2	RV	5.6	8	15	D
LC150	MED2	RV	2.8	5.6	15.9	D
LC149	MED1	RV	7.8	10.8	14.3	D
LC149	MED1	RV	2.7	7.8	29.2	D
LC149	MED1	RV	10.8	12.4	1.49	D
LC158	MN1	RV	6.2	9.5	14.8	D
LC126	HAR3	RV	14.6	17.2	0.312	D
LC126	HAR3	RV	10.3	14.6	0.281	D
LC126	HAR3	RV	2.3	4.5	13.5	D
LC126	HAR3	RV	0	2.3	11.5	D
LC125	HAR2	RV	16.4	20.6	0.3	D
LC125	HAR2	RV	10	16.4	0.304	D
LC125	HAR2	RV	7.9	10	47.6	D
LC125	HAR2	RV	5.9	7.9	45.7	D
LC125	HAR2	RV	3.3	5.9	20.8	D
LC125	HAR2	RV	0	3.3	18.5	D
LC124	HAR1	RV	0	5.4	38.2	D
LC124	HAR1	RV	10.5	13	6.89	D
LC126	HAR3	RV	4.5	10.3	37.2	D
LC124	HAR1	RV	8.4	10.5	19.8	D
LC124	HAR1	RV	5.4	8.4	11.2	D
LC123	DS5	RV	0	1.3	1.1	D

Table C-2 (Continued)
Metals Concentrations in Sediments-Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Silver (Continued)						
LC122	DS4	RV	0	0.7	3.4	D
LC120	DS2	RV	0	0.8	8.4	D
LC158	MN1	RV	0	2.9	15.6	D
LC126	HAR3	RV	17.2	20.5	0.302	D
LC134	HS4	RV	0	1.7	9.57	D
LC133	HS3	RV	0	1.9	0.833	D
LC132	HS2	RV	0	1.6	8.17	D
LC131	HS1	RV	0	5	8.68	D
LC131	HS1	RV	0	5	7.04	D
LC130	HN2	RV	0.8	4.1	15.2	D
LC130	HN2	RV	0	0.8	15	D
LC129	HN1	RV	2.8	4.9	12.7	D
LC129	HN1	RV	0	2.8	11.3	D
LC128	HAR5	RV	10.5	14.1	0.281	D
LC127	HAR4	RV	6.7	8.9	19.5	D
LC127	HAR4	RV	3.9	6.7	14.2	D
LC127	HAR4	RV	0	3.9	11.6	D
LC104	CAT5	RV	3.7	7.4	7.71	D
LC104	CAT5	RV	0	3.7	9.37	D
LC109	CN1	RV	8.5	12.8	0.917	D
LC109	CN1	RV	3.2	8.5	26	D
LC109	CN1	RV	0	3.2	9.58	D
LC107	CL3	LK	0	8.5	1.1	D
LC107	CL3	LK	0	8.5	1.83	D
LC106	CL2	LK	2.3	3.3	26.8	D
LC106	CL2	LK	0	2.3	12.2	D
LC105	CL1	LK	0	6.7	9.99	D
LC114	CS1	RV	5	9	16.5	D
LC112	CN4	RV	0.8	2.7	13.1	D
LC112	CN4	RV	0	0.8	9.83	D
LC111	CN3	RV	5	6.6	14	D

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Silver (Continued)						
LC111	CN3	RV	3.3	5	14.2	D
LC111	CN3	RV	0	3.3	13.8	D
LC110	CN2	RV	8.9	13.3	17.2	D
LC110	CN2	RV	4.4	8.9	12.8	D
LC110	CN2	RV	0	4.4	10.8	D
LC104	CAT5	RV	7.4	11	0.287	D
LC103	CAT4	RV	14.6	17.1	0.254	ND
LC103	CAT4	RV	17.1	19.2	0.234	ND
LC105	CL1	LK	6.7	10.3	0.243	ND
LC113	CN5	RV	0.5	1.8	0.334	ND
LC113	CN5	RV	1.8	3.4	0.279	ND
LC112	CN4	RV	2.7	9.1	0.444	ND
LC108	CL4	LK	0	3	0.3	ND
LC104	CAT5	RV	11	15	0.286	ND
LC127	HAR4	RV	15.7	20.2	0.291	ND
LC127	HAR4	RV	11.5	15.7	0.292	ND
LC134	HS4	RV	5.9	9.3	0.258	ND
LC134	HS4	RV	1.7	5.9	0.251	ND
LC133	HS3	RV	5.7	9.5	0.281	ND
LC133	HS3	RV	1.9	5.7	0.257	ND
LC132	HS2	RV	5.4	9.5	0.263	ND
LC132	HS2	RV	1.6	5.4	0.254	ND
LC119	DS1	RV	1.9	5.7	0.44	ND
LC131	HS1	RV	5	10.2	0.274	ND
LC128	HAR5	RV	2.5	6.4	0.273	ND
LC128	HAR5	RV	6.4	10.5	0.271	ND
LC128	HAR5	RV	0	2.5	0.259	ND
LC127	HAR4	RV	8.9	11.5	0.295	ND
LC158	MN1	RV	2.9	6.2	0.28	ND
LC121	DS3	RV	0	0.7	0.87	ND
LC124	HAR1	RV	15.7	20.7	0.256	ND

Table C-2 (Continued)
Metals Concentrations in Sediments--Lower Basin

Location ID	Cross Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Silver (Continued)						
LC124	HAR1	RV	13	15.7	0.27	ND
LC123	DS5	RV	1.3	2.7	0.25	ND
LC122	DS4	RV	0.7	2.1	0.29	ND
LC121	DS3	RV	0.7	2.9	0.26	ND
LC120	DS2	RV	0.8	6.7	0.24	ND
LC149	MED1	RV	12.4	16.4	0.284	ND
LC151	MED3	RV	14.4	20.4	0.257	ND
LC150	MED2	RV	15.2	21.2	0.249	ND
LC136	KL2	LK	7.1	10.3	0.81	ND
LC137	KL3	LK	4	10.4	0.938	ND
LC137	KL3	LK	4	10.4	0.947	ND
LC100	CAT1	RV	17.7	19.5	0.26	ND
LC100	CAT1	RV	14.1	17.7	0.24	ND
LC138	KL4	LK	0	5.1	0.751	ND
LC176	SS2	RV	2.2	5.8	0.257	ND
LC140	KN2	RV	1.8	3.9	0.27	ND
LC149	MED1	RV	16.4	20.4	0.295	ND
LC148	KS5	RV	1	2.8	0.42	ND
LC141	KN3	RV	1.3	3.1	0.279	ND
LC148	KS5	RV	0	1	0.38	ND
LC147	KS4	RV	1.2	2.5	0.31	ND
LC146	KS3	RV	1.6	3.3	0.249	ND
LC145	KS2	RV	2.7	5.5	0.285	ND
LC144	KS1	RV	2.8	8.8	0.25	ND
LC143	KN5	RV	1.4	3.6	0.271	ND
LC143	KN5	RV	0.6	1.4	0.392	ND
LC142	KN4	RV	1.8	3.5	0.276	ND
LC141	KN3	RV	3.1	5.1	0.24	ND
LC140	KN2	RV	3.9	9.3	0.25	ND
LC140	KN2	RV	3.9	9.3	0.255	ND
LC178	SS4	RV	0.9	3.5	0.287	ND

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Silver (Continued)						
LC177	SS3	RV	0.8	4.5	0.27	ND
LC139	KN1	RV	3.4	6	0.24	ND
LC156	ML3	LK	3.8	7.5	0.62	ND
LC157	ML4	LK	3.6	8.9	0.526	ND
LC117	CS5	RV	1.9	3.7	0.238	ND
LC118	DEL1	RV	18.8	24.4	0.289	ND
LC117	CS5	RV	3.7	6	0.244	ND
LC165	MS3	RV	0.5	2.1	0.269	ND
LC166	MS4	RV	3	4.4	0.293	ND
LC167	MS5	RV	0	1.6	0.261	ND
LC167	MS5	RV	1.6	4.8	0.281	ND
LC175	SS1	RV	7.4	8.9	0.252	ND
LC172	SN1	RV	5.6	9.9	0.327	ND
LC172	SN1	RV	1.7	5.6	0.243	ND
LC171	RL4	LK	8.5	10.2	0.77	ND
LC171	RL4	LK	3.5	8.5	0.56	ND
LC171	RL4	LK	0	3.5	1.4	ND
LC170	RL3	LK	0	2.5	1.78	ND
LC170	RL3	LK	2.5	10.7	0.896	ND
LC169	RL2	LK	4.4	10.9	0.62	ND
LC169	RL2	LK	4.4	10.9	0.65	ND
LC169	RL2	LK	0	4.4	1.8	ND
LC175	SS1	RV	1.4	7.4	0.264	ND
LC159	MN2	RV	2.9	10.3	0.27	ND
LC174	SN3	RV	3.5	6.7	0.618	ND
LC174	SN3	RV	0	3.5	0.433	ND
LC173	SN2	RV	1.9	9.5	0.296	ND
LC173	SN2	RV	0	1.9	3.56	ND
LC168	RL1	LK	2.6	10.3	1.66	ND
LC168	RL1	LK	0	2.6	1.75	ND
LC167	MS5	RV	1.6	4.8	0.273	ND

Table C-2 (Continued)
Metals Concentrations in Sediments—Lower Basin

Location ID	Cross-Reference	Location Type	Beginning Depth (ft)	Ending Depth (ft)	Concentration (mg/kg)	Detected (D)/Nondetected (ND)
Silver (Continued)						
LC166	MS4	RV	0	3	0.258	ND
LC182	SWN3	RV	9.5	12.5	0.233	ND
LC183	SWN4	RV	13.8	19.8	1.18	ND
LC184	SWN5	RV	8	10.8	0.281	ND
LC160	MN3	RV	2.4	8.6	0.26	ND
LC161	MN4	RV	2.8	8.2	0.26	ND
LC162	MN5	RV	2.2	5.9	0.29	ND
LC162	MN5	RV	0	2.2	0.33	ND
LC164	MS2	RV	1.2	3.7	0.25	ND
LC163	MS1	RV	3.6	9.5	0.254	ND
LC161	MN4	RV	0	2.8	0.31	ND
LC160	MN3	RV	0.7	2.4	0.25	ND
LC179	SS5	RV	1.1	4.2	0.238	ND
LC184	SWN5	RV	10.8	13.4	0.271	ND

Notes:

ft - foot

LK - lake

mg/kg - milligram per kilogram

RV - river

APPENDIX D
Data Tables for Surface Water

Antimony - Dissolved

Site					Revised		Station Average (no available 1999 data)	
ID	Location ID	XReference	Sample Date	Value	Q	Value	Unit	
CC	272	CC272	10-Nov-97	0.5	U	0.25	ug/l	0.25
CC	273	CC273	10-Nov-97	0.5	U	0.25	ug/l	
CC	273	CC273	15-May-98	0.5	U	0.25	ug/l	0.25
CC	274	CC274	10-Nov-97	0.5	U	0.25	ug/l	0.25
CC	289		15-May-98	0.5	U	0.25	ug/l	0.25
CC	290		15-May-98	0.5	U	0.25	ug/l	0.25
Canyon Creek tributary averages:								0.25
NM	289	ENM-60	13-Nov-97	0.5	U	0.25	ug/l	
NM	289	ENM-60	14-May-98	0.2	U	0.1	ug/l	0.18
NM	299	NM-40	11-Nov-97	0.5	U	0.25	ug/l	
NM	299	NM-40	14-May-98	0.2	U	0.1	ug/l	0.18
NM	300	NM300	11-Nov-97	0.5	U	0.25	ug/l	
NM	300	NM300	14-May-98	0.3		0.3	ug/l	0.28
Ninemile Creek tributary averages:								0.21
SF	202	SF202	11-Nov-97	0.5	U	0.25	ug/l	
SF	202	SF202	9-May-98	0.5	U	0.25	ug/l	0.25
SF	204	SF204	10-Nov-97	0.5	U	0.25	ug/l	
SF	204	SF204	9-May-98	0.5	U	0.25	ug/l	0.25
SF	207	SF207	10-Nov-97	1.2		1.2	ug/l	
SF	207	SF207	8-May-98	0.9		0.9	ug/l	1.05
SF	210	SF210	10-Nov-97	0.5	U	0.25	ug/l	
SF	210	SF210	8-May-98	0.2	U	0.1	ug/l	0.18
SF	211	SF211	9-Nov-97	0.5	U	0.25	ug/l	
SF	211	SF211	8-May-98	0.2	U	0.1	ug/l	0.18
SF	213	SF213	10-Nov-97	0.5	U	0.25	ug/l	
SF	213	SF213	8-May-98	0.2	U	0.1	ug/l	0.18
SF	214	SF214	9-Nov-97	0.5	U	0.25	ug/l	
SF	214	SF214	11-May-98	0.2	U	0.1	ug/l	0.18
SF	219	SF219	8-Nov-97	0.5	U	0.25	ug/l	
SF	219	SF219	6-May-98	0.5	U	0.25	ug/l	0.25
SF	221	SF221	8-Nov-97	0.5	U	0.25	ug/l	
SF	221	SF221	6-May-98	0.5	U	0.25	ug/l	0.25
SF	222	SF222	8-Nov-97	0.5	U	0.25	ug/l	
SF	222	SF222	6-May-98	0.5	U	0.25	ug/l	0.25
SF	225	SF225	7-Nov-97	0.5	U	0.25	ug/l	
SF	225	SF225	5-May-98	0.2	U	0.1	ug/l	0.18
SF	226	SF226	7-Nov-97	0.5	U	0.25	ug/l	
SF	226	SF226	5-May-98	0.2	U	0.1	ug/l	0.18
SF	229	SF229	7-Nov-97	0.5	U	0.25	ug/l	
SF	229	SF229	5-May-98	0.2		0.2	ug/l	0.23
SF	230	SF230	6-Nov-97	0.5	U	0.25	ug/l	
SF	230	SF230	5-May-98	0.2	U	0.1	ug/l	0.18
SF	231	SF338	6-Nov-97	0.5	U	0.25	ug/l	0.25
Upper South Fork Coeur d'Alene River averages:								0.27
SF	242	SF242	8-Nov-97	6.39		6.39	ug/l	
SF	242	SF242	8-May-98	3.6		3.6	ug/l	5.00
SF	245	NG-1	7-Nov-97	0.75		0.75	ug/l	
SF	245	NG-1	8-May-98	0.7		0.7	ug/l	0.73

Antimony - Dissolved

Site						Revised	Station Average (no available 1999 data)
ID	Location ID	XReference	Sample Date	Value	Q	Value	Unit
SF	248	TWO-1	7-Nov-97	0.5	U	0.25	ug/l
SF	248	TWO-1	8-May-98	0.2		0.2	ug/l
SF	246	SF246	8-May-98	0.7		0.7	ug/l
SF	251	SF251	6-Nov-97	0.52		0.52	ug/l
SF	251	SF251	8-May-98	0.4		0.4	ug/l
SF	252	TG-1	6-Nov-97	0.5		0.5	ug/l
SF	252	TG-1	7-May-98	0.032	U	0.016	ug/l
SF	256	SF256	7-Nov-97	0.98		0.98	ug/l
SF	256	SF256	7-May-98	0.4	J	0.4	ug/l
SF	265	SF265	5-Nov-97	1.2		1.2	ug/l
SF	265	SF265	9-May-98	1.3		1.3	ug/l
SF	266	MG-1	5-Nov-97	0.5	U	0.25	ug/l
SF	266	MG-1	5-May-98	0.2	U	0.1	ug/l
SF	267	SF267	5-Nov-97	1.8		1.8	ug/l
SF	267	SF267	9-May-98	0.98		0.98	ug/l
SF	269	SF269	5-Nov-97	0.5	U	0.25	ug/l
Page-Galena and Silver Belts: South Fork CDA River averages:							
PC	306	PC306	13-Nov-97	0.5	U	0.25	ug/l
PC	309	PC309	12-Nov-97	0.79		0.79	ug/l
PC	309	PC309	15-May-98	0.5	U	0.25	ug/l
PC	311	PC311	12-Nov-97	0.5	U	0.25	ug/l
PC	311	PC311	14-May-98	0.2	U	0.1	ug/l
PC	325	PC325	17-May-98	0.15	U	0.075	ug/l
Pine Creek tributary averages:							

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median:	0.25
25th percentile:	0.18
75th percentile:	0.25
95th percentile:	0.27

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median:	0.69
25th percentile:	0.25
75th percentile:	0.99
95th percentile:	3.19

Pine Creek Drainage

Median:	0.21
25th percentile:	0.15
75th percentile:	0.32
95th percentile:	0.48

Entire South Fork CDA Basin

Median:	0.25
25th percentile:	0.16
75th percentile:	0.65
95th percentile:	2.92

Total sample count: 67

Arsenic - Dissolved

Site						Revised		Station Average (no available 1999 data)
ID	Location ID	XReference	Sample Date	Value	Q	Value	Unit	
CC	272	CC272	10-Nov-97	0.1	U	0.05	ug/l	0.05
CC	273	CC273	10-Nov-97	0.1	U	0.05	ug/l	
CC	273	CC273	15-May-98	1	U	0.50	ug/l	0.28
CC	274	CC274	10-Nov-97	0.1	U	0.05	ug/l	0.05
CC	289		15-May-98	1	U	0.50	ug/l	0.50
CC	290		15-May-98	1	U	0.50	ug/l	0.50
Canyon Creek tributary averages:								0.28
NM	289	ENM-60	13-Nov-97	0.1	U	0.05	ug/l	
NM	289	ENM-60	14-May-98	2	U	1.00	ug/l	0.53
NM	299	NM-40	11-Nov-97	0.1	U	0.05	ug/l	
NM	299	NM-40	14-May-98	2	U	1.00	ug/l	0.53
NM	300	NM300	11-Nov-97	0.27		0.27	ug/l	
NM	300	NM300	14-May-98	2	U	1.00	ug/l	0.64
Ninemile Creek tributary averages:								0.56
SF	202	SF202	11-Nov-97	0.24		0.24	ug/l	
SF	202	SF202	9-May-98	1	U	0.50	ug/l	0.37
SF	204	SF204	10-Nov-97	0.11		0.11	ug/l	
SF	204	SF204	9-May-98	1	U	0.50	ug/l	0.31
SF	207	SF207	10-Nov-97	0.38		0.38	ug/l	
SF	207	SF207	8-May-98	2	U	1.00	ug/l	0.69
SF	210	SF210	10-Nov-97	0.13		0.13	ug/l	
SF	210	SF210	8-May-98	2	U	1.00	ug/l	0.57
SF	211	SF211	9-Nov-97	0.74		0.74	ug/l	
SF	211	SF211	8-May-98	2	U	1.00	ug/l	0.87
SF	213	SF213	10-Nov-97	0.1	U	0.05	ug/l	
SF	213	SF213	8-May-98	2	U	1.00	ug/l	0.53
SF	214	SF214	9-Nov-97	0.17		0.17	ug/l	
SF	214	SF214	11-May-98	2	U	1.00	ug/l	0.59
SF	219	SF219	8-Nov-97	0.21		0.21	ug/l	
SF	219	SF219	6-May-98	1	U	0.50	ug/l	0.36
SF	221	SF221	8-Nov-97	0.17		0.17	ug/l	
SF	221	SF221	6-May-98	1	U	0.50	ug/l	0.34
SF	222	SF222	8-Nov-97	0.12		0.12	ug/l	
SF	222	SF222	6-May-98	1	U	0.50	ug/l	0.31
SF	225	SF225	7-Nov-97	0.25		0.25	ug/l	
SF	225	SF225	5-May-98	2	U	1.00	ug/l	0.63
SF	226	SF226	7-Nov-97	0.16		0.16	ug/l	
SF	226	SF226	5-May-98	2	U	1.00	ug/l	0.58
SF	229	SF229	7-Nov-97	0.36		0.36	ug/l	
SF	229	SF229	5-May-98	2	U	1.00	ug/l	0.68
SF	230	SF230	6-Nov-97	0.36		0.36	ug/l	
SF	230	SF230	5-May-98	2	U	1.00	ug/l	0.68
SF	231	SF338	6-Nov-97	0.43		0.43	ug/l	0.43
Upper South Fork Coeur d'Alene River averages:								0.53
SF	242	SF242	8-Nov-97	0.74		0.74	ug/l	
SF	242	SF242	8-May-98	2	U	1.00	ug/l	0.87
SF	245	NG-1	7-Nov-97	0.23		0.23	ug/l	
SF	245	NG-1	8-May-98	2	U	1.00	ug/l	0.62
SF	248	TWO-1	7-Nov-97	0.22		0.22	ug/l	
SF	248	TWO-1	8-May-98	2	U	1.00	ug/l	0.61
SF	246	SF246	8-May-98	2	U	1.00	ug/l	1.00
SF	251	SF251	6-Nov-97	0.67		0.67	ug/l	

Arsenic - Dissolved

Site							Revised	Station Average (no available 1999 data)
ID	Location ID	XReference	Sample Date	Value	Q	Value	Unit	
SF	251	SF251	8-May-98	2	U	1.00	ug/l	0.84
SF	252	TG-1	6-Nov-97	0.35		0.35	ug/l	
SF	252	TG-1	7-May-98	0.25	J	0.25	ug/l	0.30
SF	256	SF256	7-Nov-97	0.17		0.17	ug/l	
SF	256	SF256	7-May-98	0.23	U	0.12	ug/l	0.14
SF	265	SF265	5-Nov-97	0.31		0.31	ug/l	
SF	265	SF265	9-May-98	1	U	0.50	ug/l	0.41
SF	266	MG-1	5-Nov-97	0.14		0.14	ug/l	
SF	266	MG-1	5-May-98	2	U	1.00	ug/l	0.57
SF	267	SF267	5-Nov-97	0.84		0.84	ug/l	
SF	267	SF267	9-May-98	1	U	0.50	ug/l	0.67
SF	269	SF269	5-Nov-97	0.12		0.12	ug/l	0.12
Page-Galena and Silver Belts South Fork CDA River averages:								0.56
PC	306	PC306	13-Nov-97	0.1	U	0.05	ug/l	
PC	306	PC306	16-May-98	0.2	U	0.10	ug/l	0.08
PC	309	PC309	12-Nov-97	0.1	U	0.05	ug/l	
PC	309	PC309	15-May-98	1	U	0.50	ug/l	0.28
PC	311	PC311	12-Nov-97	0.11		0.11	ug/l	
PC	311	PC311	14-May-98	2	U	1.00	ug/l	0.56
PC	325	PC325	17-May-98	0.23	U	0.12	ug/l	0.12
Pine Creek tributary averages:								0.26

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median:	0.53
25th percentile:	0.35
75th percentile:	0.61
95th percentile:	0.69

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median:	0.61
25th percentile:	0.35
75th percentile:	0.75
95th percentile:	0.94

Pine Creek Drainage

Median:	0.20
25th percentile:	0.11
75th percentile:	0.35
95th percentile:	0.51

Entire South Fork CDA Basin

Median:	0.53
25th percentile:	0.23
75th percentile:	0.74
95th percentile:	0.91

Total sample count: 68

Cadmium - Dissolved

Site	Location	XReference	Sample Date	Value	Q	Revised Value	Unit	Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
Site	Location	ID	ID						
CC	1	CC-110	17-May-91	0.1	U	0.1	ug/l		
CC	1	CC-110	5-Oct-91	0.2	U	0.1	ug/l	0.10	0.10
CC	2	CC-100/CC-6	18-May-91	0.1	U	0.1	ug/l		
CC	2	CC-100/CC-6	5-Oct-91	0.2	U	0.1	ug/l		
CC	2	CC-100/CC-6	27-Oct-93	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	30-Nov-93	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	17-Dec-93	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	20-Jan-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	18-Feb-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	8-Mar-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	23-Mar-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	7-Apr-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	19-Apr-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	4-May-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	19-May-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	8-Jun-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	23-Jun-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	25-Jul-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	16-Aug-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	13-Sep-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	6-Oct-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	16-Nov-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	13-Dec-94	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	10-Jan-95	1.3		1.3	ug/l		
CC	2	CC-100/CC-6	9-Feb-95	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	8-Mar-95	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	22-Mar-95	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	12-Apr-95	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	25-Apr-95	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	10-May-95	0.6		0.6	ug/l		
CC	2	CC-100/CC-6	23-May-95	1		1	ug/l		
CC	2	CC-100/CC-6	13-Jun-95	0.5	J	0.5	ug/l		
CC	2	CC-100/CC-6	27-Jun-95	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	11-Jul-95	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	25-Jul-95	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	14-Aug-95	0.25	U	0.125	ug/l		
CC	2	CC-100/CC-6	13-Sep-95	0.25	U	0.125	ug/l	0.21	0.21
CC	272	CC272	10-Nov-97	0.04	U	0.02	ug/l	0.02	0.02
CC	273	CC273	10-Nov-97	0.04	U	0.02	ug/l		
CC	273	CC273	15-May-98	0.1	U	0.05	ug/l	0.04	0.04
CC	274	CC274	10-Nov-97	0.043	U	0.043	ug/l	0.04	0.04
CC	289		15-May-98	0.1	U	0.05	ug/l	0.05	0.05
CC	290		15-May-98	0.1	U	0.05	ug/l	0.05	0.05
Canyon Creek tributary averages								0.07	0.07
NM	289	ENM-60	16-May-91	0.2	U	0.1	ug/l		
NM	289	ENM-60	4-Oct-91	0.2	U	0.1	ug/l		
NM	289	ENM-60	13-Nov-97	0.04	U	0.02	ug/l		
NM	289	ENM-60	14-May-98	0.2	U	0.1	ug/l	0.08	0.08
NM	299	NM-40	16-May-91	0.3		0.3	ug/l		
NM	299	NM-40	4-Oct-91	0.2		0.2	ug/l		
NM	299	NM-40	11-Nov-97	0.04	U	0.02	ug/l		
NM	299	NM-40	14-May-98	0.2	U	0.1	ug/l	0.16	0.16
NM	300	NM300	11-Nov-97	0.46		0.46	ug/l		

Cadmium - Dissolved

Site	Location							Revised		Station	Average	Station	Average
	ID	ID	XReference	Sample Date	Value	Q	Value	Unit	(w/o 1999 data)		(w/o 1999 data)		
NM	300	NM300		14-May-98	0.2	U	0.1	ug/l					
NM	300	NM300		23-May-99	1	U	0.5	ug/l	0.28		0.35		
Ninemile Creek tributary averages:													
SF	202	SF202		11-Nov-97	0.04	U	0.02	ug/l					
SF	202	SF202		9-May-98	0.1	U	0.05	ug/l					
SF	202	SF202		22-May-99	1	UJ	0.5	ug/l	0.04		0.19		
SF	204	SF204		10-Nov-97	0.04	U	0.02	ug/l					
SF	204	SF204		9-May-98	0.1	U	0.05	ug/l	0.04		0.04		
SF	207	SF207		10-Nov-97	0.04	U	0.02	ug/l					
SF	207	SF207		8-May-98	0.2	U	0.1	ug/l	0.06		0.06		
SF	210	SF210		10-Nov-97	0.04	U	0.02	ug/l					
SF	210	SF210		8-May-98	0.2	U	0.1	ug/l	0.06		0.06		
SF	211	SF211		9-Nov-97	0.29		0.29	ug/l					
SF	211	SF211		8-May-98	0.2	U	0.1	ug/l	0.20		0.20		
SF	213	SF213		10-Nov-97	0.04	U	0.02	ug/l					
SF	213	SF213		8-May-98	0.2	U	0.1	ug/l	0.06		0.06		
SF	214	SF214		9-Nov-97	0.04	U	0.02	ug/l					
SF	214	SF214		11-May-98	0.2	U	0.1	ug/l	0.06		0.06		
SF	219	SF219		8-Nov-97	0.04	U	0.02	ug/l					
SF	219	SF219		6-May-98	0.1	U	0.05	ug/l	0.04		0.04		
SF	221	SF221		8-Nov-97	0.046		0.046	ug/l					
SF	221	SF221		6-May-98	0.1	U	0.05	ug/l	0.05		0.05		
SF	222	SF222		8-Nov-97	0.04	U	0.02	ug/l					
SF	222	SF222		6-May-98	0.1	U	0.05	ug/l	0.04		0.04		
SF	225	SF225		7-Nov-97	0.04	U	0.02	ug/l					
SF	225	SF225		5-May-98	0.2	U	0.1	ug/l	0.06		0.06		
SF	226	SF226		7-Nov-97	0.04	U	0.02	ug/l					
SF	226	SF226		5-May-98	0.2	U	0.1	ug/l	0.06		0.06		
SF	229	SF229		7-Nov-97	0.092		0.092	ug/l					
SF	229	SF229		5-May-98	0.2	U	0.1	ug/l	0.10		0.10		
SF	230	SF230		6-Nov-97	0.04	U	0.02	ug/l					
SF	230	SF230		5-May-98	0.2	U	0.1	ug/l	0.06		0.06		
SF	231	SF338		6-Nov-97	0.04	U	0.02	ug/l	0.02				
Upper South Fork Coeur d'Alene River averages:													
SF	20	RG-1		14-May-91	0.3		0.3	ug/l					
SF	20	RG-1		2-Oct-91	0.2	U	0.1	ug/l	0.20		0.20		
SF	242	SF242		8-Nov-97	0.087		0.087	ug/l					
SF	242	SF242		8-May-98	0.2	U	0.1	ug/l	0.09		0.09		
SF	245	NG-1		14-May-91	0.2	U	0.1	ug/l					
SF	245	NG-1		3-Oct-91	0.2	U	0.1	ug/l					
SF	245	NG-1		7-Nov-97	0.04	U	0.02	ug/l					
SF	245	NG-1		8-May-98	0.2	U	0.1	ug/l	0.08		0.08		
SF	248	TWO-1		14-May-91	0.2	U	0.1	ug/l					
SF	248	TWO-1		3-Oct-91	0.2	U	0.1	ug/l					
SF	248	TWO-1		7-Nov-97	0.04	U	0.02	ug/l					
SF	248	TWO-1		8-May-98	0.2	U	0.1	ug/l					
SF	248	TWO-1		22-May-99	1	U	0.5	ug/l	0.08		0.16		
SF	246	SF246		8-May-98	0.2	U	0.1	ug/l	0.10		0.10		
SF	251	SF251		6-Nov-97	0.04	U	0.02	ug/l					
SF	251	SF251		8-May-98	0.2	U	0.1	ug/l	0.06		0.06		
SF	252	TG-1		14-May-91	0.2	U	0.1	ug/l					
SF	252	TG-1		2-Oct-91	0.2	U	0.1	ug/l					

Cadmium - Dissolved

Site	Location							Revised		Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
ID	ID	XReference	Sample Date	Value	Q	Value	Unit				
SF	252	TG-1	6-Nov-97	0.055		0.055	ug/l				
SF	252	TG-1	7-May-98	0.042	U	0.021	ug/l				
SF	252	TG-1	22-May-99	1	UJ	0.5	ug/l		0.07		0.16
SF	256	SF256	7-Nov-97	0.04	U	0.02	ug/l				
SF	256	SF256	7-May-98	0.42	U	0.21	ug/l		0.12		0.12
SF	265	SF265	5-Nov-97	0.17		0.17	ug/l				
SF	265	SF265	9-May-98	0.19		0.19	ug/l		0.18		0.18
SF	266	MG-1	14-May-91	0.2	U	0.1	ug/l				
SF	266	MG-1	5-Nov-97	0.04	U	0.02	ug/l				
SF	266	MG-1	5-May-98	0.2	U	0.1	ug/l				
SF	266	MG-1	22-May-99	1	UJ	0.5	ug/l		0.07		0.18
SF	267	SF267	5-Nov-97	0.1		0.1	ug/l				
SF	267	SF267	9-May-98	0.1	U	0.05	ug/l				
SF	267	SF267	23-May-99	1		1	ug/l		0.08		0.38
SF	269	SF269	5-Nov-97	0.43		0.43	ug/l		0.43		0.43
Page-Galena and Silver Belts South Fork CDA River averages:											
PC	306	PC306	13-Nov-97	0.04	U	0.02	ug/l				
PC	307	PC307	16-May-98	0	U	0	ug/l				
PC	306	PC306	23-May-99	1	U	0.5	ug/l		0.01		0.17
PC	309	PC309	12-Nov-97	0.04	U	0.02	ug/l				
PC	309	PC309	15-May-98	0.1	U	0.05	ug/l		0.04		0.04
PC	311	PC311	12-Nov-97	0.04	U	0.02	ug/l				
PC	311	PC311	14-May-98	0.2	U	0.1	ug/l				
PC	311	PC311	23-May-99	1	U	0.5	ug/l		0.06		0.21
PC	325	PC325	17-May-98	0.041	U	0.0205	ug/l		0.02		0.02
Pine Creek tributary averages:											
									0.03		0.11

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median:	0.06	0.06
25th percentile:	0.04	0.04
75th percentile:	0.08	0.10
95th percentile:	0.20	0.20

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median:	0.09	0.16
25th percentile:	0.07	0.10
75th percentile:	0.13	0.19
95th percentile:	0.30	0.40

Pine Creek Drainage

Median:	0.03	0.10
25th percentile:	0.02	0.03
75th percentile:	0.04	0.18
95th percentile:	0.06	0.20

Entire South Fork CDA Basin

Median:	0.06	0.08
25th percentile:	0.03	0.04
75th percentile:	0.11	0.18
95th percentile:	0.29	0.38

Total sample count: 126

Copper - Dissolved

Site		XReference	Sample Date	Value	Revised		Station Average (no available 1999 data)	
ID	Location ID				Q	Value		
CC	272	CC272	10-Nov-97	1.5		1.5	ug/l	1.50
CC	273	CC273	10-Nov-97	0.5	U	0.25	ug/l	
CC	273	CC273	15-May-98	3	U	1.5	ug/l	0.88
CC	274	CC274	10-Nov-97	0.5	U	0.25	ug/l	0.25
CC	289		15-May-98	3	U	1.5	ug/l	1.50
CC	290		15-May-98	3	U	1.5	ug/l	1.50
Canyon Creek tributary averages:								1.13
NM	289	ENM-60	13-Nov-97	0.5	U	0.25	ug/l	
NM	289	ENM-60	14-May-98	2	U	1	ug/l	0.63
NM	299	NM-40	11-Nov-97	0.5	U	0.25	ug/l	
NM	299	NM-40	14-May-98	2	U	1	ug/l	0.63
NM	300	NM300	11-Nov-97	0.5	U	0.25	ug/l	
NM	300	NM300	14-May-98	2	U	1	ug/l	0.63
Ninemile Creek tributary averages:								0.63
SF	202	SF202	11-Nov-97	0.5	U	0.25	ug/l	
SF	202	SF202	9-May-98	3	U	1.5	ug/l	0.88
SF	204	SF204	10-Nov-97	0.5	U	0.25	ug/l	
SF	204	SF204	9-May-98	4.3		4.3	ug/l	2.28
SF	207	SF207	10-Nov-97	0.54		0.54	ug/l	
SF	207	SF207	8-May-98	2	U	1	ug/l	0.77
SF	210	SF210	10-Nov-97	0.54		0.54	ug/l	
SF	210	SF210	8-May-98	2	U	1	ug/l	0.77
SF	211	SF211	9-Nov-97	0.5	U	0.25	ug/l	
SF	211	SF211	8-May-98	2	U	1	ug/l	0.63
SF	213	SF213	10-Nov-97	0.5	U	0.25	ug/l	
SF	213	SF213	8-May-98	2	U	1	ug/l	0.63
SF	214	SF214	9-Nov-97	0.5	U	0.25	ug/l	
SF	214	SF214	11-May-98	2	U	1	ug/l	0.63
SF	219	SF219	8-Nov-97	0.5	U	0.25	ug/l	
SF	219	SF219	6-May-98	3	U	1.5	ug/l	0.88
SF	221	SF221	8-Nov-97	0.55		0.55	ug/l	
SF	221	SF221	6-May-98	3	U	1.5	ug/l	1.03
SF	222	SF222	8-Nov-97	0.5	U	0.25	ug/l	
SF	222	SF222	6-May-98	3	U	1.5	ug/l	0.88
SF	225	SF225	7-Nov-97	0.5	U	0.25	ug/l	
SF	225	SF225	5-May-98	2	U	1	ug/l	0.63
SF	226	SF226	7-Nov-97	0.5	U	0.25	ug/l	
SF	226	SF226	5-May-98	2	U	1	ug/l	0.63
SF	229	SF229	7-Nov-97	0.5	U	0.25	ug/l	
SF	229	SF229	5-May-98	2	U	1	ug/l	0.63
SF	230	SF230	6-Nov-97	0.5	U	0.25	ug/l	
SF	230	SF230	5-May-98	2	U	1	ug/l	0.63
SF	231	SF338	6-Nov-97	0.5	U	0.25	ug/l	0.25
Upper South Fork Coeur d'Alene River averages:								0.81
SF	242	SF242	8-Nov-97	1.3		1.3	ug/l	
SF	242	SF242	8-May-98	2	U	1	ug/l	1.15
SF	245	NG-1	7-Nov-97	0.75		0.75	ug/l	
SF	245	NG-1	8-May-98	2	U	1	ug/l	0.88
SF	246	SF246	8-May-98	2	U	1	ug/l	1.00

Copper - Dissolved

Site		XReference	Sample Date	Value	Q	Revised Value	Unit	Station Average (no available 1999 data)
ID	Location ID							
SF	248	TWO-1	7-Nov-97	1	1	ug/l		
SF	248	TWO-1	8-May-98	2	U	1	ug/l	1.00
SF	251	SF251	6-Nov-97	0.63		0.63	ug/l	
SF	251	SF251	8-May-98	2	U	1	ug/l	0.82
SF	252	TG-1	6-Nov-97	0.84		0.84	ug/l	
SF	252	TG-1	7-May-98	0.44	U	0.22	ug/l	0.53
SF	256	SF256	7-Nov-97	0.5	U	0.25	ug/l	
SF	256	SF256	7-May-98	0.44	U	0.22	ug/l	0.24
SF	265	SF265	5-Nov-97	1.3		1.3	ug/l	
SF	265	SF265	9-May-98	3	U	1.5	ug/l	1.40
SF	266	MG-1	5-Nov-97	0.5	U	0.25	ug/l	
SF	266	MG-1	5-May-98	2	U	1	ug/l	0.63
SF	267	SF267	5-Nov-97	0.5	U	0.25	ug/l	
SF	267	SF267	9-May-98	3	U	1.5	ug/l	0.88
SF	269	SF269	5-Nov-97	0.66		0.66	ug/l	0.66
Page-Galena and Silver Belts South Fork CDA River averages:								0.83
PC	306	PC306	13-Nov-97	0.5	U	0.25	ug/l	
PC	306	PC306	16-May-98	0.4	U	0.2	ug/l	0.23
PC	309	PC309	12-Nov-97	0.5	U	0.25	ug/l	
PC	309	PC309	15-May-98	3	U	1.5	ug/l	0.88
PC	311	PC311	12-Nov-97	0.5	U	0.25	ug/l	
PC	311	PC311	14-May-98	2	U	1	ug/l	0.63
PC	325	PC325	17-May-98	0.44	U	0.22	ug/l	0.22
Pine Creek tributary averages:								0.49

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median:	0.63
25th percentile:	0.63
75th percentile:	0.88
95th percentile:	1.50

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median:	0.88
25th percentile:	0.64
75th percentile:	1.00
95th percentile:	1.28

Pine Creek Drainage

Median:	0.43
25th percentile:	0.22
75th percentile:	0.69
95th percentile:	0.84

Entire South Fork CDA Basin

Median:	0.63
25th percentile:	0.53
75th percentile:	0.75
95th percentile:	1.48

Total sample count: 68

Iron - Dissolved

Site	Location				Revised		Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
ID	ID	XReference	Sample Date	Value	Q	Value	Unit	
CC	272	CC272	10-Nov-97	10	U	5	ug/l	5.00
CC	273	CC273	10-Nov-97	10	U	5	ug/l	
CC	273	CC273	15-May-98	20	U	10	ug/l	7.50
CC	274	CC274	10-Nov-97	10	U	5	ug/l	5.00
CC	289		15-May-98	20	U	10	ug/l	10.00
CC	290		15-May-98	20	U	10	ug/l	10.00
Canyon Creek tributary averages:								7.50
NM	289	ENM-60	13-Nov-97	10	U	5	ug/l	
NM	289	ENM-60	14-May-98	20	U	10	ug/l	7.50
NM	299	NM-40	11-Nov-97	150		150	ug/l	
NM	299	NM-40	14-May-98	49		49	ug/l	99.50
NM	300	NM300	11-Nov-97	100		100	ug/l	
NM	300	NM300	14-May-98	48		48	ug/l	
NM	300	NM300	23-May-99	20		20	ug/l	74.00
Ninemile Creek tributary averages:								60.33
SF	202	SF202	11-Nov-97	10	U	5	ug/l	
SF	202	SF202	9-May-98	20	U	10	ug/l	7.50
SF	204	SF204	10-Nov-97	10	U	5	ug/l	
SF	204	SF204	9-May-98	20	U	10	ug/l	7.50
SF	207	SF207	10-Nov-97	10	U	5	ug/l	
SF	207	SF207	8-May-98	20	U	10	ug/l	7.50
SF	210	SF210	10-Nov-97	10	U	5	ug/l	
SF	210	SF210	8-May-98	20	U	10	ug/l	7.50
SF	211	SF211	9-Nov-97	10	U	5	ug/l	
SF	211	SF211	8-May-98	20	U	10	ug/l	7.50
SF	213	SF213	10-Nov-97	10	U	5	ug/l	
SF	213	SF213	8-May-98	20	U	10	ug/l	7.50
SF	214	SF214	9-Nov-97	10	U	5	ug/l	
SF	214	SF214	11-May-98	20	U	10	ug/l	7.50
SF	219	SF219	8-Nov-97	10	U	5	ug/l	
SF	219	SF219	6-May-98	20	U	10	ug/l	7.50
SF	221	SF221	8-Nov-97	10	U	5	ug/l	
SF	221	SF221	6-May-98	20	U	10	ug/l	7.50
SF	222	SF222	8-Nov-97	10	U	5	ug/l	
SF	222	SF222	6-May-98	20	U	10	ug/l	7.50
SF	223	SF223	8-Nov-97	10	U	5	ug/l	
SF	223	SF223	6-May-98	20	U	10	ug/l	7.50
SF	225	SF225	7-Nov-97	10	U	5	ug/l	
SF	225	SF225	5-May-98	20	U	10	ug/l	7.50
SF	226	SF226	7-Nov-97	10	U	5	ug/l	
SF	226	SF226	5-May-98	20	U	10	ug/l	7.50
SF	229	SF229	7-Nov-97	10	U	5	ug/l	
SF	229	SF229	5-May-98	20	U	10	ug/l	7.50
SF	230	SF230	6-Nov-97	10	U	5	ug/l	
SF	230	SF230	5-May-98	20	U	10	ug/l	7.50
SF	231	SF338	6-Nov-97	10	U	5	ug/l	5.00
Upper South Fork Coeur d'Alene River averages:								7.33
SF	242	SF242	8-Nov-97	10	U	5	ug/l	
SF	242	SF242	8-May-98	20	U	10	ug/l	7.50
SF	245	NG-1	7-Nov-97	10	U	5	ug/l	
SF	245	NG-1	8-May-98	20	U	10	ug/l	7.50
SF	248	TWO-1	7-Nov-97	21.7		21.7	ug/l	
SF	248	TWO-1	8-May-98	20	U	10	ug/l	
SF	248	TWO-1	22-May-99	30		30	ug/l	15.85
SF	246	SF246	8-May-98	20	U	10	ug/l	10.00
SF	251	SF251	6-Nov-97	14		14	ug/l	
SF	251	SF251	8-May-98	20	U	10	ug/l	12.00
SF	252	TG-1	6-Nov-97	10	U	5	ug/l	
SF	252	TG-1	7-May-98	27.9	J	27.9	ug/l	
SF	252	TG-1	22-May-99	7.7		7.7	ug/l	16.45
SF	256	SF256	7-Nov-97	10	U	5	ug/l	
SF	256	SF256	7-May-98	59.2	J	59.2	ug/l	32.10
SF	265	SF265	5-Nov-97	29.9		29.9	ug/l	
SF	265	SF265	9-May-98	20	U	10	ug/l	19.95
SF	266	MG-1	5-Nov-97	10	U	5	ug/l	
SF	266	MG-1	5-May-98	20	U	10	ug/l	
SF	266	MG-1	22-May-99	40		40	ug/l	18.33

Iron - Dissolved

Site	Location						Revised	Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
ID	ID	XReference	Sample Date	Value	Q	Unit	Value		
SF	267	SF267	5-Nov-97	10	U	5	ug/l		
SF	267	SF267	9-May-98	20	U	10	ug/l		
SF	267	SF267	23-May-99	10		10	ug/l	7.50	8.33
SF	269	SF269	5-Nov-97	10	U	5	ug/l	5.00	5.00
Page-Galena and Silver Belts South Fork CDA River averages:									
PC	306	PC306	13-Nov-97	10	U	5	ug/l		
PC	306	PC306	16-May-98	15.4	UJ	7.7	ug/l		
PC	306	PC306	23-May-99	10	U	5	ug/l	6.35	5.90
PC	309	PC309	12-Nov-97	10	U	5	ug/l		
PC	309	PC309	15-May-98	20	U	10	ug/l	7.50	7.50
PC	311	PC311	12-Nov-97	10	U	5	ug/l		
PC	311	PC311	14-May-98	20	U	10	ug/l		
PC	311	PC311	23-May-99	40		40	ug/l	7.50	18.33
PC	325	PC325	17-May-98	29.1	J	29.1	ug/l	29.10	29.10
Pine Creek tributary averages:									
								12.61	15.21

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median:	7.50	7.50
25th percentile:	7.50	7.50
75th percentile:	7.50	7.50
95th percentile:	64.40	49.10

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median:	10.00	12.00
25th percentile:	7.50	7.92
75th percentile:	16.15	19.14
95th percentile:	26.03	26.33

Pine Creek Drainage

Median:	7.50	12.92
25th percentile:	7.21	7.10
75th percentile:	12.90	21.03
95th percentile:	25.86	25.86

Entire South Fork CDA Basin

Median:	7.50	12.00
25th percentile:	7.36	7.30
75th percentile:	14.53	20.08
95th percentile:	60.56	46.82

Total sample count: 77

Lead-Dissolved revised

Site ID	Location ID	XReference	Sample Date	Value	Q	Revised Value	Unit	Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
CC	1 CC-110		17-May-91	3 U		1.5 ug/l			
CC	1 CC-110		5-Oct-91	1 U		0.5 ug/l		1	1
CC	2 CC-100/CC-6		18-May-91	3 U		1.5 ug/l			
CC	2 CC-100/CC-6		5-Oct-91	1 U		0.5 ug/l			
CC	2 CC-100/CC-6		27-Oct-93	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		30-Nov-93	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		17-Dec-93	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		20-Jan-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		18-Feb-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		8-Mar-94	1.3 U		0.65 ug/l			
CC	2 CC-100/CC-6		23-Mar-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		7-Apr-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		19-Apr-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		4-May-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		19-May-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		8-Jun-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		23-Jun-94	3 J		3 ug/l			
CC	2 CC-100/CC-6		25-Jul-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		16-Aug-94	2.5 J		2.5 ug/l			
CC	2 CC-100/CC-6		13-Sep-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		6-Oct-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		16-Nov-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		13-Dec-94	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		10-Jan-95	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		9-Feb-95	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		8-Mar-95	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		22-Mar-95	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		12-Apr-95	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		25-Apr-95	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		10-May-95	3 J		3 ug/l			
CC	2 CC-100/CC-6		23-May-95	3 J		3 ug/l			
CC	2 CC-100/CC-6		13-Jun-95	3 J		3 ug/l			
CC	2 CC-100/CC-6		27-Jun-95	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		11-Jul-95	3 J		3 ug/l			
CC	2 CC-100/CC-6		25-Jul-95	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		14-Aug-95	1.5 U		0.75 ug/l			
CC	2 CC-100/CC-6		13-Sep-95	1.5 U		0.75 ug/l		1.13	1.13
CC	272 CC272		10-Nov-97	0.58		0.58 ug/l		0.58	0.58
CC	273 CC273		10-Nov-97	0.12		0.12 ug/l			
CC	273 CC273		15-May-98	0.5 U		0.25 ug/l		0.19	0.19
CC	274 CC274		10-Nov-97	0.22		0.22 ug/l		0.22	0.22
CC	289		15-May-98	0.5 U		0.25 ug/l		0.25	0.25
CC	290		15-May-98	0.5 U		0.25 ug/l		0.25	0.25

Lead-Dissolved revised

Site ID	Location ID	XReference	Sample Date	Value	Q	Revised Value	Unit	Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
Canyon Creek tributary averages:									
NM	289 ENM-60		16-May-91	3 UJ		1.5 ug/l			
NM	289 ENM-60		4-Oct-91	0.1 U		0.05 ug/l			
NM	289 ENM-60		13-Nov-97	0.1 U		0.05 ug/l			
NM	289 ENM-60		14-May-98	0.6		0.6 ug/l		0.55	0.55
NM	299 NM-40		16-May-91	3 UJ		1.5 ug/l			
NM	299 NM-40		4-Oct-91	0.1 U		0.05 ug/l			
NM	299 NM-40		11-Nov-97	0.1 U		0.05 ug/l			
NM	299 NM-40		14-May-98	0.2 U		0.1 ug/l		0.43	0.43
NM	300 NM300		11-Nov-97	3.95		3.95 ug/l			
NM	300 NM300		14-May-98	1.4		1.4 ug/l			
NM	300 NM300		23-May-99	1.3		1.3 ug/l		2.68	2.22
Ninemile Creek tributary averages:									
SF	202 SF202		11-Nov-97	0.11		0.11 ug/l			
SF	202 SF202		9-May-98	0.5 U		0.25 ug/l			
SF	202 SF202		22-May-99	1 U		0.5 ug/l		0.18	0.29
SF	204 SF204		10-Nov-97	0.1 U		0.05 ug/l			
SF	204 SF204		9-May-98	0.5 U		0.25 ug/l		0.15	0.15
SF	207 SF207		10-Nov-97	0.1 U		0.05 ug/l			
SF	207 SF207		8-May-98	0.2 U		0.1 ug/l		0.08	0.08
SF	210 SF210		10-Nov-97	0.1 U		0.05 ug/l			
SF	210 SF210		8-May-98	0.2 U		0.1 ug/l		0.08	0.08
SF	211 SF211		9-Nov-97	0.3		0.3 ug/l			
SF	211 SF211		8-May-98	0.2 U		0.1 ug/l		0.2	0.2
SF	213 SF213		10-Nov-97	0.1 U		0.05 ug/l			
SF	213 SF213		8-May-98	0.2 U		0.1 ug/l		0.08	0.08
SF	214 SF214		9-Nov-97	0.11		0.11 ug/l			
SF	214 SF214		11-May-98	0.2 U		0.1 ug/l		0.11	0.11
SF	219 SF219		8-Nov-97	0.1 U		0.05 ug/l			
SF	219 SF219		6-May-98	0.5 U		0.25 ug/l		0.15	0.15
SF	221 SF221		8-Nov-97	0.1 U		0.05 ug/l			
SF	221 SF221		6-May-98	0.5 U		0.25 ug/l		0.15	0.15
SF	222 SF222		8-Nov-97	0.1 U		0.05 ug/l			
SF	222 SF222		6-May-98	0.5 U		0.25 ug/l		0.15	0.15
SF	225 SF225		7-Nov-97	0.1 U		0.05 ug/l			
SF	225 SF225		5-May-98	0.2 U		0.1 ug/l		0.08	0.08
SF	226 SF226		7-Nov-97	0.22		0.22 ug/l			
SF	226 SF226		5-May-98	0.2 U		0.1 ug/l		0.16	0.16
SF	229 SF229		7-Nov-97	0.24		0.24 ug/l			
SF	229 SF229		5-May-98	0.2 U		0.1 ug/l		0.17	0.17
SF	230 SF230		6-Nov-97	0.1 U		0.05 ug/l			
SF	230 SF230		5-May-98	0.2 U		0.1 ug/l		0.08	0.08
SF	231 SF338		6-Nov-97	0.1 U		0.05 ug/l		0.05	0.05

Lead-Dissolved revised

Site ID	Location ID	XReference	Sample Date	Value	Q	Revised Value	Unit	Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
Upper South Fork Coeur d'Alene River averages:									
SF	20 RG-1		14-May-91	3 U		1.5 ug/l			
SF	20 RG-1		2-Oct-91	1 U		0.5 ug/l		1	1
SF	242 SF242		8-Nov-97	0.1		0.1 ug/l			
SF	242 SF242		8-May-98	0.6		0.6 ug/l		0.35	0.35
SF	245 NG-1		14-May-91	3 U		1.5 ug/l			
SF	245 NG-1		3-Oct-91	1 U		0.5 ug/l			
SF	245 NG-1		7-Nov-97	0.43		0.43 ug/l			
SF	245 NG-1		8-May-98	0.2		0.2 ug/l		0.66	0.66
SF	248 TWO-1		14-May-91	3		3 ug/l			
SF	248 TWO-1		3-Oct-91	1 U		0.5 ug/l			
SF	248 TWO-1		7-Nov-97	0.68		0.68 ug/l			
SF	248 TWO-1		8-May-98	0.2 U		0.1 ug/l			
SF	248 TWO-1		22-May-99	1 U		0.5 ug/l		1.07	0.96
SF	246 SF246		8-May-98	0.2		0.2 ug/l		0.2	0.2
SF	251 SF251		6-Nov-97	0.1 U		0.05 ug/l			
SF	251 SF251		8-May-98	0.2 U		0.1 ug/l		0.08	0.08
SF	252 TG-1		14-May-91	3 U		1.5 ug/l			
SF	252 TG-1		2-Oct-91	1 U		0.5 ug/l			
SF	252 TG-1		6-Nov-97	0.1		0.1 ug/l			
SF	252 TG-1		7-May-98	0.11 U		0.055 ug/l			
SF	252 TG-1		22-May-99	1		1 ug/l		0.54	0.63
SF	256 SF256		7-Nov-97	0.1 U		0.05 ug/l			
SF	256 SF256		7-May-98	0.11 U		0.055 ug/l		0.05	0.05
SF	265 SF265		5-Nov-97	0.27		0.27 ug/l			
SF	265 SF265		9-May-98	0.5 U		0.25 ug/l		0.26	0.26
SF	266 MG-1		14-May-91	3 U		1.5 ug/l			
SF	266 MG-1		5-Nov-97	0.12		0.12 ug/l			
SF	266 MG-1		5-May-98	1.2		1.2 ug/l			
SF	266 MG-1		22-May-99	1		1 ug/l		0.94	0.96
SF	267 SF267		5-Nov-97	0.12		0.12 ug/l			
SF	267 SF267		9-May-98	0.5 U		0.25 ug/l			
SF	267 SF267		23-May-99	1		1 ug/l		0.19	0.46
SF	269 SF269		5-Nov-97	0.24		0.24 ug/l		0.24	0.24
Page-Galena and Silver Belts South Fork CDA River averages:									
PC	306 PC306		13-Nov-97	0.1 U		0.05 ug/l			
PC	306 PC306		16-May-98	0.1 U		0.05 ug/l			
PC	306 PC306		23-May-99	1 U		0.5 ug/l		0.05	0.2
PC	309 PC309		12-Nov-97	0.1 U		0.05 ug/l			
PC	309 PC309		15-May-98	0.5 U		0.25 ug/l		0.15	0.15
PC	311 PC311		12-Nov-97	0.1 U		0.05 ug/l			
PC	311 PC311		14-May-98	0.2 U		0.1 ug/l			
PC	311 PC311		23-May-99	1 U		0.5 ug/l		0.08	0.22
PC	325 PC325		17-May-98	0.44 J		0.44 ug/l		0.44	0.44
Pine Creek tributary averages:									
								0.18	0.25

Lead-Dissolved revised

Site ID	Location ID	XReference	Sample Date	Revised Value	Q Value	Unit	Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)								
				Median			0.17	0.17
				25th p			0.11	0.11
				75th p			0.25	0.29
				95th p			1.11	1.11
Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)								
				Median			0.31	0.4
				25th p			0.2	0.23
				75th p			0.73	0.73
				95th p			1.03	0.98
Pine Creek Drainage								
				Median			0.11	0.21
				25th p			0.07	0.19
				75th p			0.22	0.27
				95th p			0.4	0.41
Entire South Fork CDA Basin								
				Median			0.17	0.21
				25th p			0.09	0.15
				75th p			0.49	0.51
				95th p			1.1	1.09

Total sample count: 126

Manganese - Dissolved

Site ID	Location ID	XReference	Sample Date	Value	Q	Revised Value	Unit	Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
CC 272	CC272		10-Nov-97	1	U	0.5	ug/l	0.50	0.50
CC 273	CC273		10-Nov-97	1	U	0.5	ug/l		
CC 273	CC273		15-May-98	5	U	2.5	ug/l	1.50	1.50
CC 274	CC274		10-Nov-97	1	U	0.5	ug/l	0.50	0.50
CC 289			15-May-98	5	U	2.5	ug/l	2.50	2.50
CC 290			15-May-98	5	U	2.5	ug/l	2.50	2.50
Canyon Creek tributary averages:									
NM 289	ENM-60		13-Nov-97	1	U	0.5	ug/l		1.50
NM 289	ENM-60		14-May-98	5	U	2.5	ug/l	1.50	1.50
NM 299	NM-40		11-Nov-97	38.7		38.7	ug/l		
NM 299	NM-40		14-May-98	10		10	ug/l	24.35	24.35
NM 300	NM300		11-Nov-97	75.6		75.6	ug/l		
NM 300	NM300		14-May-98	23		23	ug/l		
NM 300	NM300		23-May-99	12		12	ug/l	49.30	36.87
Ninemile Creek tributary averages:									
SF 202	SF202		11-Nov-97	1	U	0.5	ug/l		25.05
SF 202	SF202		9-May-98	5	U	2.5	ug/l	1.50	20.91
SF 204	SF204		10-Nov-97	1	U	0.5	ug/l		
SF 204	SF204		9-May-98	5	U	2.5	ug/l	1.50	1.50
SF 207	SF207		10-Nov-97	1	U	0.5	ug/l		
SF 207	SF207		8-May-98	5	U	2.5	ug/l	1.50	1.50
SF 210	SF210		10-Nov-97	1	U	0.5	ug/l		
SF 210	SF210		8-May-98	5	U	2.5	ug/l	1.50	1.50
SF 211	SF211		9-Nov-97	1.8		1.8	ug/l		
SF 211	SF211		8-May-98	5	U	2.5	ug/l	2.15	2.15
SF 213	SF213		10-Nov-97	1	U	0.5	ug/l		
SF 213	SF213		8-May-98	5	U	2.5	ug/l	1.50	1.50
SF 214	SF214		9-Nov-97	1.5		1.5	ug/l		
SF 214	SF214		11-May-98	5	U	2.5	ug/l	2.00	2.00
SF 219	SF219		8-Nov-97	1	U	0.5	ug/l		
SF 219	SF219		6-May-98	5	U	2.5	ug/l	1.50	1.50
SF 221	SF221		8-Nov-97	1	U	0.5	ug/l		
SF 221	SF221		6-May-98	5	U	2.5	ug/l	1.50	1.50
SF 222	SF222		8-Nov-97	1	U	0.5	ug/l		
SF 222	SF222		6-May-98	5	U	2.5	ug/l	1.50	1.50
SF 225	SF225		7-Nov-97	1	U	0.5	ug/l		
SF 225	SF225		5-May-98	5	U	2.5	ug/l	1.50	1.50
SF 226	SF226		7-Nov-97	1	U	0.5	ug/l		
SF 226	SF226		5-May-98	5	U	2.5	ug/l	1.50	1.50
SF 229	SF229		7-Nov-97	1	U	0.5	ug/l		
SF 229	SF229		5-May-98	5	U	2.5	ug/l	1.50	1.50
SF 230	SF230		6-Nov-97	1	U	0.5	ug/l		
SF 230	SF230		5-May-98	5	U	2.5	ug/l	1.50	1.50
SF 231	SF338		6-Nov-97	1	U	0.5	ug/l	0.50	0.50
Upper South Fork Coeur d'Alene River averages:									
SF 242	SF242		8-Nov-97	1	U	0.5	ug/l		1.51
SF 242	SF242		8-May-98	5	U	2.5	ug/l	1.50	1.50
SF 245	NG-1		7-Nov-97	2.5		2.5	ug/l		
SF 245	NG-1		8-May-98	5	U	2.5	ug/l	2.50	2.50
SF 248	TWO-1		7-Nov-97	4.1		4.1	ug/l		
SF 248	TWO-1		8-May-98	5	U	2.5	ug/l		
SF 248	TWO-1		22-May-99	2		2	ug/l	3.30	2.87
SF 246	SF246		8-May-98	5	U	2.5	ug/l	2.50	2.50
SF 251	SF251		6-Nov-97	1		1	ug/l		
SF 251	SF251		8-May-98	5	U	2.5	ug/l	1.75	1.75
SF 252	TG-1		6-Nov-97	3.7		3.7	ug/l		
SF 252	TG-1		7-May-98	2.8	J	2.8	ug/l		
SF 252	TG-1		22-May-99	4.3		4.3	ug/l	3.25	3.60
SF 256	SF256		7-Nov-97	1	U	0.5	ug/l		
SF 256	SF256		7-May-98	0.11	J	0.11	ug/l	0.31	0.31
SF 265	SF265		5-Nov-97	6.3		6.3	ug/l		
SF 265	SF265		9-May-98	5	U	2.5	ug/l	4.40	4.40

Manganese - Dissolved

Site		XReference	Sample Date	Value	Q	Revised		Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
ID	Location ID					Value	Unit		
SF	266	MG-1	5-Nov-97	1	U	0.5	ug/l		
SF	266	MG-1	5-May-98	5	U	2.5	ug/l		
SF	266	MG-1	22-May-99	1		1	ug/l	1.50	1.33
SF	267	SF267	5-Nov-97	2.1		2.1	ug/l		
SF	267	SF267	9-May-98	5	U	2.5	ug/l		
SF	267	SF267	23-May-99	1.6		1.6	ug/l	2.30	2.07
SF	269	SF269	5-Nov-97	1	U	0.5	ug/l	0.50	0.50
Page-Galena and Silver Belts South Fork CDA River averages:									
PC	306	PC306	13-Nov-97	1	U	0.5	ug/l		
PC	306	PC306	16-May-98	6.5	J	6.5	ug/l		
PC	306	PC306	23-May-99	1	U	0.5	ug/l	3.50	2.50
PC	309	PC309	12-Nov-97	1	U	0.5	ug/l		
PC	309	PC309	15-May-98	5	U	2.5	ug/l	1.50	1.50
PC	311	PC311	12-Nov-97	1	U	0.5	ug/l		
PC	311	PC311	14-May-98	5	U	2.5	ug/l		
PC	311	PC311	23-May-99	1	U	0.5	ug/l	1.50	1.17
PC	325	PC325	17-May-98	0.92	J	0.92	ug/l	0.92	0.92
Pine Creek tributary averages:									
2.16									
2.12									
1.86									
1.52									

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median:	1.50	1.50
25th percentile:	1.50	1.50
75th percentile:	1.75	1.75
95th percentile:	22.17	22.17

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median:	2.30	2.07
25th percentile:	1.50	1.42
75th percentile:	2.88	2.68
95th percentile:	3.85	4.00

Pine Creek Drainage

Median:	1.50	1.33
25th percentile:	1.36	1.11
75th percentile:	2.00	1.75
95th percentile:	3.20	2.35

Entire South Fork CDA Basin

Median:	1.50	1.50
25th percentile:	1.43	1.26
75th percentile:	2.44	2.22
95th percentile:	20.33	20.35

Total sample count: 75

Mercury - Dissolved

Site						Revised		Station Average (no available 1999 data)
ID	Location ID	XReference	Sample Date	Value	Q	Value	Unit	
CC	272	CC272	10-Nov-97	0.2	U	0.1	ug/l	0.10
CC	273	CC273	10-Nov-97	0.2	U	0.1	ug/l	
CC	273	CC273	15-May-98	0.2	U	0.1	ug/l	0.10
CC	274	CC274	10-Nov-97	0.2	U	0.1	ug/l	0.10
CC	289		15-May-98	0.2	U	0.1	ug/l	0.10
CC	290		15-May-98	0.2	U	0.1	ug/l	0.10
Canyon Creek tributary averages:								0.10
NM	289	ENM-60	13-Nov-97	0.2	U	0.1	ug/l	
NM	289	ENM-60	14-May-98	0.2	U	0.1	ug/l	0.10
NM	299	NM-40	11-Nov-97	0.2	U	0.1	ug/l	
NM	299	NM-40	14-May-98	0.2	U	0.1	ug/l	0.10
NM	300	NM300	11-Nov-97	0.2	U	0.1	ug/l	
NM	300	NM300	14-May-98	0.2	U	0.1	ug/l	
Ninemile Creek tributary averages:								0.10
SF	202	SF202	11-Nov-97	0.2	U	0.1	ug/l	
SF	202	SF202	9-May-98	0.2	UJ	0.1	ug/l	0.10
SF	204	SF204	10-Nov-97	0.2	U	0.1	ug/l	
SF	204	SF204	9-May-98	0.2	UJ	0.1	ug/l	0.10
SF	207	SF207	10-Nov-97	0.2	U	0.1	ug/l	
SF	207	SF207	8-May-98	0.2	U	0.1	ug/l	0.10
SF	210	SF210	10-Nov-97	0.2	U	0.1	ug/l	
SF	210	SF210	8-May-98	0.2	U	0.1	ug/l	0.10
SF	211	SF211	9-Nov-97	0.2	U	0.1	ug/l	
SF	211	SF211	8-May-98	0.2	U	0.1	ug/l	0.10
SF	213	SF213	10-Nov-97	0.2	U	0.1	ug/l	
SF	213	SF213	8-May-98	0.2	U	0.1	ug/l	0.10
SF	214	SF214	9-Nov-97	0.2	U	0.1	ug/l	
SF	214	SF214	11-May-98	0.2	U	0.1	ug/l	0.10
SF	219	SF219	8-Nov-97	0.2	U	0.1	ug/l	
SF	219	SF219	6-May-98	0.2	U	0.1	ug/l	0.10
SF	221	SF221	8-Nov-97	0.2	U	0.1	ug/l	
SF	221	SF221	6-May-98	0.2	U	0.1	ug/l	0.10
SF	222	SF222	8-Nov-97	0.2	U	0.1	ug/l	
SF	222	SF222	6-May-98	0.2	U	0.1	ug/l	0.10
SF	225	SF225	7-Nov-97	0.2	U	0.1	ug/l	
SF	225	SF225	5-May-98	0.2	U	0.1	ug/l	0.10
SF	226	SF226	7-Nov-97	0.2	U	0.1	ug/l	
SF	226	SF226	5-May-98	0.2	U	0.1	ug/l	0.10
SF	229	SF229	7-Nov-97	0.2	U	0.1	ug/l	
SF	229	SF229	5-May-98	0.2	U	0.1	ug/l	0.10
SF	230	SF230	6-Nov-97	0.2	U	0.1	ug/l	
SF	230	SF230	5-May-98	0.2	U	0.1	ug/l	0.10
SF	231	SF338	6-Nov-97	0.2	U	0.1	ug/l	0.10
Upper South Fork Coeur d'Alene River averages:								0.10
SF	242	SF242	8-Nov-97	0.2	U	0.1	ug/l	
SF	242	SF242	8-May-98	0.2	U	0.1	ug/l	0.10
SF	245	NG-1	7-Nov-97	0.2	U	0.1	ug/l	
SF	245	NG-1	8-May-98	0.2	U	0.1	ug/l	0.10

Mercury - Dissolved

Site							Revised	Station Average (no available 1999 data)
ID	Location ID	XReference	Sample Date	Value	Q	Value	Unit	
SF	248	TWO-1	7-Nov-97	2.61		2.61	ug/l	
SF	248	TWO-1	8-May-98	0.2	U	0.1	ug/l	1.36
SF	246	SF246	8-May-98	0.2	U	0.1	ug/l	0.10
SF	251	SF251	6-Nov-97	0.2	U	0.1	ug/l	
SF	251	SF251	8-May-98	0.2	U	0.1	ug/l	0.10
SF	252	TG-1	6-Nov-97	0.2	U	0.1	ug/l	
SF	252	TG-1	7-May-98	0.16	U	0.08	ug/l	0.09
SF	256	SF256	7-Nov-97	0.2	U	0.1	ug/l	
SF	256	SF256	7-May-98	0.16	U	0.08	ug/l	0.09
SF	265	SF265	5-Nov-97	0.2	U	0.1	ug/l	
SF	265	SF265	9-May-98	0.2	UJ	0.1	ug/l	0.10
SF	266	MG-1	5-Nov-97	0.2	U	0.1	ug/l	
SF	266	MG-1	5-May-98	0.2	U	0.1	ug/l	0.10
SF	267	SF267	5-Nov-97	0.2	U	0.1	ug/l	
SF	267	SF267	9-May-98	0.2	UJ	0.1	ug/l	0.10
SF	269	SF269	5-Nov-97	0.2	U	0.1	ug/l	0.10
Page-Galena and Silver Belts South Fork CDA River averages:								0.21
PC	306	PC306	13-Nov-97	0.2	U	0.1	ug/l	
PC	306	PC306	16-May-98	0.2	UJ	0.1	ug/l	0.10
PC	309	PC309	12-Nov-97	0.2	U	0.1	ug/l	
PC	309	PC309	15-May-98	0.2	U	0.1	ug/l	0.10
PC	311	PC311	12-Nov-97	0.2	U	0.1	ug/l	
PC	311	PC311	14-May-98	0.2	U	0.1	ug/l	0.10
PC	325	PC325	17-May-98	0.16	U	0.08	ug/l	0.08
Pine Creek tributary averages:								0.10

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median:	0.10
25th percentile:	0.10
75th percentile:	0.10
95th percentile:	0.10

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median:	0.10
25th percentile:	0.10
75th percentile:	0.10
95th percentile:	0.73

Pine Creek Drainage

Median:	0.10
25th percentile:	0.10
75th percentile:	0.10
95th percentile:	0.10

Entire South Fork CDA Basin

Median:	0.10
25th percentile:	0.10
75th percentile:	0.10
95th percentile:	0.66

Total sample count: 68

Silver - Dissolved

Site						Revised		Station Average (no available 1999 data)
ID	Location ID	XReference	Sample Date	Value	Q	Value	Unit	
CC	272	CC272	10-Nov-97	0.03	U	0.015	ug/l	0.02
CC	273	CC273	10-Nov-97	0.03	U	0.015	ug/l	
CC	273	CC273	15-May-98	0.3	U	0.15	ug/l	0.08
CC	274	CC274	10-Nov-97	0.03	U	0.015	ug/l	0.02
CC	289		15-May-98	0.3	U	0.15	ug/l	0.15
CC	290		15-May-98	0.3	U	0.15	ug/l	0.15
Canyon Creek tributary averages:								0.08
NM	289	ENM-60	13-Nov-97	0.03	U	0.015	ug/l	
NM	289	ENM-60	14-May-98	0.2	U	0.1	ug/l	0.06
NM	299	NM-40	11-Nov-97	0.03	U	0.015	ug/l	
NM	299	NM-40	14-May-98	0.2	U	0.1	ug/l	0.06
NM	300	NM300	11-Nov-97	0.03	U	0.015	ug/l	
NM	300	NM300	14-May-98	0.2	U	0.1	ug/l	0.06
Ninemile Creek tributary averages:								0.06
SF	202	SF202	11-Nov-97	0.03	U	0.015	ug/l	
SF	202	SF202	9-May-98	0.3	U	0.15	ug/l	0.08
SF	204	SF204	10-Nov-97	0.03	U	0.015	ug/l	
SF	204	SF204	9-May-98	0.3	U	0.15	ug/l	0.08
SF	207	SF207	10-Nov-97	0.03	U	0.015	ug/l	
SF	207	SF207	8-May-98	0.2	U	0.1	ug/l	0.06
SF	210	SF210	10-Nov-97	0.03	U	0.015	ug/l	
SF	210	SF210	8-May-98	0.2	U	0.1	ug/l	0.06
SF	211	SF211	9-Nov-97	0.03	U	0.015	ug/l	
SF	211	SF211	8-May-98	0.2	U	0.1	ug/l	0.06
SF	213	SF213	10-Nov-97	0.03	U	0.015	ug/l	
SF	213	SF213	8-May-98	0.2	U	0.1	ug/l	0.06
SF	214	SF214	9-Nov-97	0.03	U	0.015	ug/l	
SF	214	SF214	11-May-98	0.2	U	0.1	ug/l	0.06
SF	219	SF219	8-Nov-97	0.03	U	0.015	ug/l	
SF	219	SF219	6-May-98	0.3	U	0.15	ug/l	0.08
SF	221	SF221	8-Nov-97	0.03	U	0.015	ug/l	
SF	221	SF221	6-May-98	0.3	U	0.15	ug/l	0.08
SF	222	SF222	8-Nov-97	0.03	U	0.015	ug/l	
SF	222	SF222	6-May-98	0.3	U	0.15	ug/l	0.08
SF	225	SF225	7-Nov-97	0.03	U	0.015	ug/l	
SF	225	SF225	5-May-98	0.2	U	0.1	ug/l	0.06
SF	226	SF226	7-Nov-97	0.03	U	0.015	ug/l	
SF	226	SF226	5-May-98	0.2	U	0.1	ug/l	0.06
SF	229	SF229	7-Nov-97	0.03	U	0.015	ug/l	
SF	229	SF229	5-May-98	0.2	U	0.1	ug/l	0.06
SF	230	SF230	6-Nov-97	0.03	U	0.015	ug/l	
SF	230	SF230	5-May-98	0.2	U	0.1	ug/l	0.06
SF	231	SF338	6-Nov-97	0.03	U	0.015	ug/l	0.02
Upper South Fork Coeur d'Alene River averages:								0.06
SF	242	SF242	8-Nov-97	0.03	U	0.015	ug/l	
SF	242	SF242	8-May-98	0.2	U	0.1	ug/l	0.06
SF	245	NG-1	7-Nov-97	0.03	U	0.015	ug/l	
SF	245	NG-1	8-May-98	0.2	U	0.1	ug/l	0.06

Silver - Dissolved

Site							Revised	Station Average (no available 1999 data)
ID	Location ID	XReference	Sample Date	Value	Q	Value	Unit	
SF	248	TWO-1	7-Nov-97	0.03	U	0.015	ug/l	
SF	248	TWO-1	8-May-98	0.2	U	0.1	ug/l	0.06
SF	246	SF246	8-May-98	0.2	U	0.1	ug/l	0.07
SF	251	SF251	6-Nov-97	0.03	U	0.015	ug/l	
SF	251	SF251	8-May-98	0.2	U	0.1	ug/l	0.06
SF	252	TG-1	6-Nov-97	0.03	U	0.015	ug/l	
SF	252	TG-1	7-May-98	0.042	U	0.021	ug/l	0.02
SF	256	SF256	7-Nov-97	0.03	U	0.015	ug/l	
SF	256	SF256	7-May-98	0.042	U	0.021	ug/l	0.02
SF	265	SF265	5-Nov-97	0.03	U	0.015	ug/l	
SF	265	SF265	9-May-98	0.3	U	0.15	ug/l	0.08
SF	266	MG-1	5-Nov-97	0.03	U	0.015	ug/l	
SF	266	MG-1	5-May-98	0.2	U	0.1	ug/l	0.06
SF	267	SF267	5-Nov-97	0.03	U	0.015	ug/l	
SF	267	SF267	9-May-98	0.3	U	0.15	ug/l	0.08
SF	269	SF269	5-Nov-97	0.03	U	0.015	ug/l	0.08
Page-Galena and Silver Belts South Fork CDA River averages:								0.06
PC	306	PC306	13-Nov-97	0.03	U	0.015	ug/l	0.02
PC	309	PC309	12-Nov-97	0.03	U	0.015	ug/l	
PC	309	PC309	15-May-98	0.3	U	0.15	ug/l	0.08
PC	311	PC311	12-Nov-97	0.03	U	0.015	ug/l	
PC	311	PC311	14-May-98	0.2	U	0.1	ug/l	0.06
PC	325	PC325	17-May-98	0.042	UJ	0.021	ug/l	0.02
Pine Creek tributary averages:								0.04

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median: 0.06
 25th percentile: 0.06
 75th percentile: 0.08
 95th percentile: 0.14

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median: 0.06
 25th percentile: 0.06
 75th percentile: 0.08
 95th percentile: 0.08

Pine Creek Drainage

Median: 0.04
 25th percentile: 0.02
 75th percentile: 0.06
 95th percentile: 0.08

Entire South Fork CDA Basin

Median: 0.06
 25th percentile: 0.04
 75th percentile: 0.08
 95th percentile: 0.14

Total sample count: 67

Zinc - Dissolved

Site ID	Location ID	XReference	Sample Date	Value	Q	Revised Value	Unit	Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
CC 1	CC-110		17-May-91	20	U	10	ug/l		
CC 1	CC-110		5-Oct-91	12	U	6	ug/l	8.00	8.00
CC 2	CC-100/CC-6		18-May-91	20	U	10	ug/l		
CC 2	CC-100/CC-6		5-Oct-91	12	U	6	ug/l		
CC 2	CC-100/CC-6		27-Oct-93	21.7		21.7	ug/l		
CC 2	CC-100/CC-6		30-Nov-93	25.1		25.1	ug/l		
CC 2	CC-100/CC-6		17-Dec-93	21.7		21.7	ug/l		
CC 2	CC-100/CC-6		20-Jan-94	22.8		22.8	ug/l		
CC 2	CC-100/CC-6		18-Feb-94	36		36	ug/l		
CC 2	CC-100/CC-6		8-Mar-94	36		36	ug/l		
CC 2	CC-100/CC-6		23-Mar-94	17		17	ug/l		
CC 2	CC-100/CC-6		7-Apr-94	26		26	ug/l		
CC 2	CC-100/CC-6		19-Apr-94	27		27	ug/l		
CC 2	CC-100/CC-6		4-May-94	22		22	ug/l		
CC 2	CC-100/CC-6		19-May-94	13		13	ug/l		
CC 2	CC-100/CC-6		8-Jun-94	27		27	ug/l		
CC 2	CC-100/CC-6		23-Jun-94	35		35	ug/l		
CC 2	CC-100/CC-6		25-Jul-94	28		28	ug/l		
CC 2	CC-100/CC-6		16-Aug-94	37		37	ug/l		
CC 2	CC-100/CC-6		13-Sep-94	29		29	ug/l		
CC 2	CC-100/CC-6		6-Oct-94	16		16	ug/l		
CC 2	CC-100/CC-6		16-Nov-94	17		17	ug/l		
CC 2	CC-100/CC-6		13-Dec-94	40		40	ug/l		
CC 2	CC-100/CC-6		10-Jan-95	28		28	ug/l		
CC 2	CC-100/CC-6		9-Feb-95	52		52	ug/l		
CC 2	CC-100/CC-6		8-Mar-95	26		26	ug/l		
CC 2	CC-100/CC-6		22-Mar-95	21		21	ug/l		
CC 2	CC-100/CC-6		12-Apr-95	21		21	ug/l		
CC 2	CC-100/CC-6		25-Apr-95	12		12	ug/l		
CC 2	CC-100/CC-6		10-May-95	21		21	ug/l		
CC 2	CC-100/CC-6		23-May-95	10		10	ug/l		
CC 2	CC-100/CC-6		13-Jun-95	12		12	ug/l		
CC 2	CC-100/CC-6		27-Jun-95	31		31	ug/l		
CC 2	CC-100/CC-6		11-Jul-95	26		26	ug/l		
CC 2	CC-100/CC-6		25-Jul-95	42		42	ug/l		
CC 2	CC-100/CC-6		14-Aug-95	28		28	ug/l		
CC 2	CC-100/CC-6		13-Sep-95	23		23	ug/l	24.75	24.75
CC 272	CC272		10-Nov-97	10.1		10.1	ug/l	10.10	10.10
CC 273	CC273		10-Nov-97	9.75		9.75	ug/l		
CC 273	CC273		15-May-98	5	U	2.5	ug/l	6.13	6.13
CC 274	CC274		10-Nov-97	20.3		20.3	ug/l	20.30	20.30
CC 289			15-May-98	5.4		5.4	ug/l	5.40	5.40
CC 290			15-May-98	5.8		5.8	ug/l	5.80	5.80
Canyon Creek tributary averages:									
11.50									
NM 289	ENM-60		16-May-91	20	U	10	ug/l		
NM 289	ENM-60		4-Oct-91	12	U	6	ug/l		
NM 289	ENM-60		13-Nov-97	4.7		4.7	ug/l		
NM 289	ENM-60		14-May-98	11		11	ug/l	7.93	7.93
NM 299	NM-40		16-May-91	20	U	10	ug/l		
NM 299	NM-40		4-Oct-91	12	U	6	ug/l		
NM 299	NM-40		11-Nov-97	4.9		4.9	ug/l		
NM 299	NM-40		14-May-98	30		30	ug/l	12.73	12.73
NM 300	NM300		11-Nov-97	77		77	ug/l		
NM 300	NM300		14-May-98	34		34	ug/l		
NM 300	NM300		23-May-99	22		22	ug/l	55.50	44.33
Ninemile Creek tributary averages:									
25.38									
SF 202	SF202		11-Nov-97	4.5		4.5	ug/l		
SF 202	SF202		9-May-98	6.2		6.2	ug/l		
SF 202	SF202		22-May-99	1.3		1.3	ug/l	5.35	4.00

Zinc - Dissolved

Site		ID	Location ID	XReference	Sample Date	Value	Q	Revised Value	Unit	Station Average	Station Average
										(w/o 1999 data)	(w/ 1999 data)
SF	204	SF204	10-Nov-97	5.99	5.99			ug/l		5.95	5.95
SF	204	SF204	9-May-98	5.9	5.9			ug/l		5.95	5.95
SF	207	SF207	10-Nov-97	16.4	16.4			ug/l			
SF	207	SF207	8-May-98	10	U	5		ug/l		10.70	10.70
SF	210	SF210	10-Nov-97	4.2	4.2			ug/l			
SF	210	SF210	8-May-98	10	U	5		ug/l		4.60	4.60
SF	211	SF211	9-Nov-97	22.9	22.9			ug/l			
SF	211	SF211	8-May-98	10	U	5		ug/l		13.95	13.95
SF	213	SF213	10-Nov-97	7.35	7.35			ug/l			
SF	213	SF213	8-May-98	10	U	5		ug/l		6.18	6.18
SF	214	SF214	9-Nov-97	5.93	5.93			ug/l			
SF	214	SF214	11-May-98	10	U	5		ug/l		5.47	5.47
SF	219	SF219	8-Nov-97	2	2			ug/l			
SF	219	SF219	6-May-98	5	U	2.5		ug/l		2.25	2.25
SF	221	SF221	8-Nov-97	2.1	2.1			ug/l			
SF	221	SF221	6-May-98	5	U	2.5		ug/l		2.30	2.30
SF	222	SF222	8-Nov-97	3.2	3.2			ug/l			
SF	222	SF222	6-May-98	5	U	2.5		ug/l		2.85	2.85
SF	225	SF225	7-Nov-97	5	5			ug/l			
SF	225	SF225	5-May-98	10	U	5		ug/l		5.00	5.00
SF	226	SF226	7-Nov-97	11.5	11.5			ug/l			
SF	226	SF226	5-May-98	10	U	5		ug/l		8.25	8.25
SF	229	SF229	7-Nov-97	23.7	23.7			ug/l			
SF	229	SF229	5-May-98	22	22			ug/l		22.85	22.85
SF	230	SF230	6-Nov-97	3.8	3.8			ug/l			
SF	230	SF230	5-May-98	10	U	5		ug/l		4.40	4.40
SF	231	SF338	6-Nov-97	6.04	6.04			ug/l		6.04	6.04
Upper South Fork Coeur d'Alene River averages:										7.08	6.99
SF	20	RG-1	14-May-91	20	U	10		ug/l			
SF	20	RG-1	2-Oct-91	20		20		ug/l		15.00	15.00
SF	242	SF242	8-Nov-97	23.4	23.4			ug/l			
SF	242	SF242	8-May-98	20		20		ug/l		21.70	21.70
SF	245	NG-1	14-May-91	20	U	10		ug/l			
SF	245	NG-1	3-Oct-91	12	U	6		ug/l			
SF	245	NG-1	7-Nov-97	15		15		ug/l			
SF	245	NG-1	8-May-98	10	U	5		ug/l		9.00	9.00
SF	248	TWO-1	14-May-91	20	U	10		ug/l			
SF	248	TWO-1	3-Oct-91	12	U	6		ug/l			
SF	248	TWO-1	7-Nov-97	7.39	7.39			ug/l			
SF	248	TWO-1	8-May-98	10	U	5		ug/l			
SF	248	TWO-1	22-May-99	1.5		1.5		ug/l		7.10	5.98
SF	246	SF246	8-May-98	10	U	5		ug/l		5.00	5.00
SF	251	SF251	6-Nov-97	5.01	5.01			ug/l			
SF	251	SF251	8-May-98	10	U	5		ug/l		5.01	5.01
SF	252	TG-1	14-May-91	20	U	10		ug/l			
SF	252	TG-1	2-Oct-91	12		12		ug/l			
SF	252	TG-1	6-Nov-97	27.5	27.5			ug/l			
SF	252	TG-1	7-May-98	20.2	20.2			ug/l			
SF	252	TG-1	22-May-99	23		23		ug/l		17.43	18.54
SF	256	SF256	7-Nov-97	4.6	4.6			ug/l			
SF	256	SF256	7-May-98	1.9	J	1.9		ug/l		3.25	3.25
SF	265	SF265	5-Nov-97	23		23		ug/l			
SF	265	SF265	9-May-98	18.6		18.6		ug/l		20.80	20.80
SF	266	MG-1	14-May-91	20	U	10		ug/l			
SF	266	MG-1	5-Nov-97	5.42	5.42			ug/l			
SF	266	MG-1	5-May-98	10	U	5		ug/l			
SF	266	MG-1	22-May-99	2.8		2.8		ug/l		6.81	5.81
SF	267	SF267	5-Nov-97	11		11		ug/l			
SF	267	SF267	9-May-98	5	U	2.5		ug/l			
SF	267	SF267	23-May-99	3.3		3.3		ug/l		6.75	5.60
SF	269	SF269	5-Nov-97	24.5	24.5			ug/l		24.50	24.50
Page-Galena and Silver Belts South Fork CDA River averages:										11.86	11.68
PC	306	PC306	13-Nov-97	2	U	1		ug/l			
PC	306	PC306	16-May-98	1.9	UJ	0.95		ug/l			

Zinc - Dissolved

Site ID	Location ID	XReference	Sample Date	Value	Q	Revised Value	Unit	Station Average (w/o 1999 data)	Station Average (w/ 1999 data)
PC 306	PC306		23-May-99	3.9		3.9	ug/l	0.98	1.95
PC 309	PC309		12-Nov-97	4.7		4.7	ug/l		
PC 309	PC309		15-May-98	5	U	2.5	ug/l	3.60	3.60
PC 311	PC311		12-Nov-97	2.5		2.5	ug/l		
PC 311	PC311		14-May-98	10	U	5	ug/l		
PC 311	PC311		23-May-99	1	U	0.5	ug/l	3.75	2.67
PC 325	PC325		17-May-98	9.7	J	9.7	ug/l	9.70	9.70
Pine Creek tributary averages:								4.51	4.48

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median:	6.13	6.13
25th percentile:	5.35	5.00
75th percentile:	10.70	10.70
95th percentile:	24.37	24.37

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median:	8.05	7.49
25th percentile:	6.31	5.45
75th percentile:	18.27	19.11
95th percentile:	22.96	22.96

Pine Creek Drainage

Median:	3.68	3.13
25th percentile:	2.94	2.49
75th percentile:	5.24	5.13
95th percentile:	8.81	8.79

Entire South Fork CDA Basin

Median:	6.13	6.13
25th percentile:	4.15	3.74
75th percentile:	14.48	14.90
95th percentile:	24.23	24.23

Total sample count: 126

Measured Hardness

Site		Location X-					Station Average	
ID	Location ID	Reference	Sample Date	Value	Q	Unit	Values	
CC	2	CC-100/CC-6	27-Oct-93	12,000		ug/l		
CC	2	CC-100/CC-6	30-Nov-93	16,000		ug/l		
CC	2	CC-100/CC-6	17-Dec-93	16,000		ug/l		
CC	2	CC-100/CC-6	20-Jan-94	20,000		ug/l		
CC	2	CC-100/CC-6	18-Feb-94	20,000		ug/l		
CC	2	CC-100/CC-6	8-Mar-94	16,000		ug/l		
CC	2	CC-100/CC-6	23-Mar-94	20,000		ug/l		
CC	2	CC-100/CC-6	7-Apr-94	12,000		ug/l		
CC	2	CC-100/CC-6	19-Apr-94	10,000		ug/l		
CC	2	CC-100/CC-6	4-May-94	8,000		ug/l		
CC	2	CC-100/CC-6	19-May-94	4,000		ug/l		
CC	2	CC-100/CC-6	8-Jun-94	12,000		ug/l		
CC	2	CC-100/CC-6	23-Jun-94	12,000		ug/l		
CC	2	CC-100/CC-6	25-Jul-94	16,000		ug/l		
CC	2	CC-100/CC-6	16-Aug-94	2,000		ug/l		
CC	2	CC-100/CC-6	13-Sep-94	32,000		ug/l	14,250	
Canyon Creek tributary averages:							14,250	
NM	300	NM300	23-May-99	95,000		ug/l	95,000	
Ninemile Creek averages:							95,000	
SF	202	SF202	22-May-99	7,000		ug/l	7,000	
Upper South Fork Coeur d'Alene River averages:							7,000	
SF	248	TWO-1	22-May-99	23,000		ug/l	23,000	
SF	252	TG-1	22-May-99	35,000		ug/l	35,000	
SF	266	MG-1	22-May-99	13,000		ug/l	13,000	
SF	267	SF267	23-May-99	16,000		ug/l	16,000	
Page-Galena and Silver Belts South Fork CDA River averages:							18,800	
PC	306	PC306	23-May-99	5,000		ug/l	5,000	
PC	311	PC311	23-May-99	6,000		ug/l	6,000	
Pine Creek tributary averages:							5,500	

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC stations)

Median:	14,250
25th percentile:	10,625
75th percentile:	54,625
95th percentile:	86,925

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork CDA River)

Median:	19,500
25th percentile:	15,250
75th percentile:	26,000
95th percentile:	33,200

Pine Creek Drainage

Median:	5,500
25th percentile:	5,250
75th percentile:	5,750
95th percentile:	5,950

Entire South Fork CDA Basin

Median:	14,250
25th percentile:	7,938
75th percentile:	40,313
95th percentile:	81,553

Derived and Measured Hardness

Site ID	Location ID	X Reference	Sample Date	Analyte	Value	Qualifier	Revised Value	Unit	Revised Value	Unit	Hardness (derived* and measured)	Average Hardness
CC	2	CC-100/CC-8	27-Oct-93	Hardness	12,000	ugl	12,000	mgl	12,000	mgl	12,000	12,000
CC	2	CC-100/CC-8	30-Nov-93	Hardness	16,000	ugl	16,000	mgl	16,000	mgl	16,000	16,000
CC	2	CC-100/CC-8	17-Dec-93	Hardness	16,000	ugl	16,000	mgl	16,000	mgl	16,000	16,000
CC	2	CC-100/CC-8	20-Jan-94	Hardness	20,000	ugl	20,000	mgl	20,000	mgl	20,000	20,000
CC	2	CC-100/CC-8	18-Feb-94	Hardness	20,000	ugl	20,000	mgl	20,000	mgl	20,000	20,000
CC	2	CC-100/CC-8	8-Mar-94	Hardness	18,000	ugl	18,000	mgl	18,000	mgl	18,000	18,000
CC	2	CC-100/CC-8	23-Mar-94	Hardness	20,000	ugl	20,000	mgl	20,000	mgl	20,000	20,000
CC	2	CC-100/CC-8	7-Apr-94	Hardness	12,000	ugl	12,000	mgl	12,000	mgl	12,000	12,000
CC	2	CC-100/CC-8	19-Apr-94	Hardness	10,000	ugl	10,000	mgl	10,000	mgl	10,000	10,000
CC	2	CC-100/CC-8	4-May-94	Hardness	8,000	ugl	8,000	mgl	8,000	mgl	8,000	8,000
CC	2	CC-100/CC-8	19-May-94	Hardness	4,000	ugl	4,000	mgl	4,000	mgl	4,000	4,000
CC	2	CC-100/CC-8	8-Jun-94	Hardness	12,000	ugl	12,000	mgl	12,000	mgl	12,000	12,000
CC	2	CC-100/CC-8	23-Jun-94	Hardness	12,000	ugl	12,000	mgl	12,000	mgl	12,000	12,000
CC	2	CC-100/CC-8	25-Jul-94	Hardness	16,000	ugl	16,000	mgl	16,000	mgl	16,000	16,000
CC	2	CC-100/CC-8	16-Aug-94	Hardness	2,000	ugl	2,000	mgl	2,000	mgl	2,000	2,000
CC	2	CC-100/CC-8	13-Sep-94	Hardness	32,000	ugl	32,000	mgl	32,000	mgl	32,000	32,000
CC	272	CC272	10-Nov-97	Calcium	1,000	ugl	1,000	mgl	1,000	mgl	1,000	1,000
CC	273	CC273	10-Nov-97	Magnesium	193	ugl	193	ugl	0.193	mgl	0.193	3.292
CC	273	CC273	10-Nov-97	Calcium	2,180	ugl	2,180	ugl	2,180	mgl	2,180	7,914
CC	273	CC273	15-May-98	Magnesium	600	ugl	600	ugl	0.600	mgl	0.600	5,454
CC	273	CC273	15-May-98	Calcium	1,480	ugl	1,480	ugl	1,480	mgl	1,480	5,454
CC	274	CC274	10-Nov-97	Calcium	2320	ugl	2,320	ugl	2,320	mgl	2,320	8,926
CC	274	CC274	10-Nov-97	Magnesium	688	ugl	688	ugl	0.688	mgl	0.688	8,626
CC	289	ENM-60	15-May-98	Calcium	973	ugl	973	ugl	0.973	mgl	0.973	3,422
CC	289	ENM-60	15-May-98	Magnesium	241	ugl	241	ugl	0.241	mgl	0.241	3,422
CC	290	ENM-60	15-May-98	Calcium	1,470	ugl	1,470	ugl	1,470	mgl	1,470	5,400
CC	290	ENM-60	15-May-98	Magnesium	420	ugl	420	ugl	0.420	mgl	0.420	5,400
NM	289	ENM-60	13-Nov-97	Calcium	3,850	ugl	3,850	ugl	3,850	mgl	3,850	11,582
NM	289	ENM-60	13-Nov-97	Magnesium	478	ugl	478	ugl	0.478	mgl	0.478	8,698
NM	289	ENM-60	14-May-98	Calcium	1,840	ugl	1,840	ugl	1,840	mgl	1,840	5,813
NM	289	ENM-60	14-May-98	Magnesium	296	ugl	296	ugl	0.296	mgl	0.296	5,813
NM	289	NM-40	11-Nov-97	Calcium	34,400	ugl	34,400	ugl	34,400	mgl	34,400	138,195
NM	289	NM-40	11-Nov-97	Magnesium	12,700	ugl	12,700	ugl	12,700	mgl	12,700	118,399
NM	289	NM-40	14-May-98	Calcium	28,800	ugl	28,800	ugl	28,800	mgl	28,800	117,948
NM	289	NM-40	14-May-98	Magnesium	11,300	ugl	11,300	ugl	11,300	mgl	11,300	118,277
NM	300	NM300	11-Nov-97	Calcium	34,800	ugl	34,800	ugl	34,800	mgl	34,800	139,194
NM	300	NM300	11-Nov-97	Magnesium	12,700	ugl	12,700	ugl	12,700	mgl	12,700	139,194
NM	300	NM300	14-May-98	Calcium	28,800	ugl	28,800	ugl	28,800	mgl	28,800	117,948
NM	300	NM300	14-May-98	Magnesium	11,300	ugl	11,300	ugl	11,300	mgl	11,300	118,277
NM	300	NM300	23-May-98	Hardness	95,000	ugl	95,000	ugl	95,000	mgl	95,000	95,000
SP	202	SF202	11-Nov-97	Calcium	2,840	ugl	2,840	ugl	2,840	mgl	2,840	11,951
SP	202	SF202	11-Nov-97	Magnesium	1,180	ugl	1,180	ugl	1,180	mgl	1,180	5,927
SP	202	SF202	9-May-98	Calcium	1,280	ugl	1,280	ugl	1,280	mgl	1,280	5,235
SP	202	SF202	9-May-98	Magnesium	495	ugl	495	ugl	0.495	mgl	0.495	10,208
SP	202	SF202	22-May-98	Hardness	7,000	ugl	7,000	ugl	7,000	mgl	7,000	8,052
SP	204	SF204	10-Nov-97	Calcium	5,820	ugl	5,820	ugl	5,820	mgl	5,820	18,350
SP	204	SF204	10-Nov-97	Magnesium	927	ugl	927	ugl	927	mgl	927	4,635
SP	204	SF204	9-May-98	Calcium	3,330	ugl	3,330	ugl	3,330	mgl	3,330	14,280
SP	207	SF207	10-Nov-97	Magnesium	450	ugl	450	ugl	0.450	mgl	0.450	8,052
SP	207	SF207	10-Nov-97	Calcium	16,200	ugl	16,200	ugl	16,200	mgl	16,200	70,760
SP	207	SF207	8-May-98	Magnesium	7,360	ugl	7,360	ugl	7,360	mgl	7,360	36,318
SP	210	SF210	10-Nov-97	Calcium	8,190	ugl	8,190	ugl	8,190	mgl	8,190	34,540
SP	210	SF210	10-Nov-97	Magnesium	1,830	ugl	1,830	ugl	1,830	mgl	1,830	30,433

Derived and Measured Hardness

Site ID	Location ID	XReference	Sample Date	Analyte	Value	Qualifier	Revised Value	Unit	Revised Value	Unit	Hardness (derived* and measured)	Average Hardness
SF	210	SF210	8-May-98	Calcium	7500		7,500	ug/l	7,500	mg/l	25.234	
SF	210	SF210	8-May-98	Magnesium	1580		1,580	ug/l	1,580	mg/l		27.859
SF	211	SF211	9-Nov-97	Calcium	15300		15,300	ug/l	15,300	mg/l	58.218	
SF	211	SF211	9-Nov-97	Magnesium	4860		4,860	ug/l	4,860	mg/l		
SF	211	SF211	8-May-98	Calcium	3720		3,720	ug/l	3,720	mg/l	12.097	
SF	211	SF211	8-May-98	Magnesium	682		682	ug/l	0.682	mg/l		35.157
SF	213	SF213	10-Nov-97	Calcium	16100		16,100	ug/l	16,100	mg/l	46.873	
SF	213	SF213	10-Nov-97	Magnesium	1620		1,620	ug/l	1,620	mg/l		
SF	213	SF213	8-May-98	Calcium	16800		16,800	ug/l	16,800	mg/l	49.897	
SF	213	SF213	8-May-98	Magnesium	1930		1,930	ug/l	1,930	mg/l		48.385
SF	214	SF214	9-Nov-97	Calcium	8210		8,210	ug/l	8,210	mg/l	25.895	
SF	214	SF214	9-Nov-97	Magnesium	1310		1,310	ug/l	1,310	mg/l		
SF	214	SF214	11-May-98	Calcium	6000		6,000	ug/l	6,000	mg/l	18.618	
SF	214	SF214	11-May-98	Magnesium	883		883	ug/l	0.883	mg/l		22.257
SF	219	SF219	8-Nov-97	Calcium	3590		3,590	ug/l	3,590	mg/l	11.942	
SF	219	SF219	8-Nov-97	Magnesium	723		723	ug/l	0.723	mg/l		
SF	219	SF219	6-May-98	Calcium	2940		2,940	ug/l	2,940	mg/l	9.771	
SF	219	SF219	6-May-98	Magnesium	590		590	ug/l	0.590	mg/l		10.856
SF	221	SF221	8-Nov-97	Calcium	8980		8,980	ug/l	8,980	mg/l	29.835	
SF	221	SF221	8-Nov-97	Magnesium	1800		1,800	ug/l	1,800	mg/l		
SF	221	SF221	6-May-98	Calcium	6600		6,600	ug/l	6,600	mg/l	22.245	
SF	221	SF221	6-May-98	Magnesium	1400		1,400	ug/l	1,400	mg/l		26.040
SF	222	SF222	8-Nov-97	Calcium	11300		11,300	ug/l	11,300	mg/l	47.777	
SF	222	SF222	8-Nov-97	Magnesium	4750		4,750	ug/l	4,750	mg/l		
SF	222	SF222	6-May-98	Calcium	8640		8,640	ug/l	8,640	mg/l	36.564	
SF	222	SF222	6-May-98	Magnesium	3640		3,640	ug/l	3,640	mg/l		42.170
SF	225	SF225	7-Nov-97	Calcium	14900		14,900	ug/l	14,900	mg/l	60.801	
SF	225	SF225	7-Nov-97	Magnesium	5730		5,730	ug/l	5,730	mg/l		
SF	225	SF225	5-May-98	Calcium	9500		9,500	ug/l	9,500	mg/l	38.670	
SF	225	SF225	5-May-98	Magnesium	3630		3,630	ug/l	3,630	mg/l		49.736
SF	226	SF226	7-Nov-97	Calcium	12100		12,100	ug/l	12,100	mg/l	39.850	
SF	226	SF226	7-Nov-97	Magnesium	2340		2,340	ug/l	2,340	mg/l		
SF	226	SF226	5-May-98	Calcium	8780		8,780	ug/l	8,780	mg/l	28.471	
SF	226	SF226	5-May-98	Magnesium	1590		1,590	ug/l	1,590	mg/l		34.161
SF	229	SF229	7-Nov-97	Calcium	11700		11,700	ug/l	11,700	mg/l	46.263	
SF	229	SF229	7-Nov-97	Magnesium	4140		4,140	ug/l	4,140	mg/l		
SF	229	SF229	5-May-98	Calcium	12100		12,100	ug/l	12,100	mg/l	48.498	
SF	229	SF229	5-May-98	Magnesium	4440		4,440	ug/l	4,440	mg/l		47.381
SF	230	SF230	6-Nov-97	Calcium	15800		15,800	ug/l	15,800	mg/l	59.713	
SF	230	SF230	6-Nov-97	Magnesium	4920		4,920	ug/l	4,920	mg/l		
SF	230	SF230	5-May-98	Calcium	8750		8,750	ug/l	8,750	mg/l	34.162	
SF	230	SF230	5-May-98	Magnesium	2990		2,990	ug/l	2,990	mg/l		46.937
SF	231	SF338	6-Nov-97	Calcium	25600		25,600	ug/l	25,600	mg/l	101.603	
SF	231	SF338	6-Nov-97	Magnesium	9150		9,150	ug/l	9,150	mg/l		101.603
Upper South Fork/Coeur d'Alene River averages												444860
SF	242	SF242	8-Nov-97	Calcium	28200		28,200	ug/l	28,200	mg/l	94.959	
SF	242	SF242	8-Nov-97	Magnesium	5960		5,960	ug/l	5,960	mg/l		
SF	242	SF242	8-May-98	Calcium	25400		25,400	ug/l	25,400	mg/l	80.966	
SF	242	SF242	8-May-98	Magnesium	4260		4,260	ug/l	4,260	mg/l		87.963
SF	245	NG-1	7-Nov-97	Calcium	10600		10,600	ug/l	10,600	mg/l	45.493	
SF	245	NG-1	7-Nov-97	Magnesium	4620		4,620	ug/l	4,620	mg/l		
SF	245	NG-1	8-May-98	Calcium	8320		8,320	ug/l	8,320	mg/l	35.106	
SF	245	NG-1	8-May-98	Magnesium	3480		3,480	ug/l	3,480	mg/l		40.300
SF	248	TWO-1	7-Nov-97	Calcium	12100		12,100	ug/l	12,100	mg/l	43.144	
SF	248	TWO-1	7-Nov-97	Magnesium	3140		3,140	ug/l	3,140	mg/l		
SF	248	TWO-1	8-May-98	Calcium	9080		9,080	ug/l	9,080	mg/l	31.156	
SF	248	TWO-1	8-May-98	Magnesium	2060		2,060	ug/l	2,060	mg/l		
SF	248	TWO-1	22-May-99	Hardness	23,000		23,000	ug/l	23,000	mg/l		32,433

Derived and Measured Hardness

Site ID	Location ID	X Reference	Sample Date	Analyte	Value	Qualifier	Revised Value	Unit	Revised Value	Unit	Hardness (derived* and measured)	Average Hardness
SF	250	MCFG-1	8-May-98	Calcium	8240		8,240	ug/l	8,240	ug/l	29.305	
SF	252	TG-1	8-May-98	Magnesium	2120		2,120	ug/l	2,120	ug/l		
SF	251	SF251	6-Nov-97	Calcium	12800		12,800	ug/l	12,800	ug/l	70.385	
SF	251	SF251	6-Nov-97	Magnesium	9270	J	9,270	ug/l	9,270	ug/l	50.487	
SF	251	SF251	6-May-98	Calcium	9450		9,450	ug/l	9,450	ug/l	60.436	
SF	252	TG-1	6-Nov-97	Calcium	11300		11,300	ug/l	11,300	ug/l	50.783	
SF	252	TG-1	6-Nov-97	Magnesium	5480		5,480	ug/l	5,480	ug/l		
SF	252	TG-1	7-May-98	Calcium	8180		8,180	ug/l	8,180	ug/l	38.255	
SF	252	TG-1	7-May-98	Magnesium	4330	J	4,330	ug/l	4,330	ug/l		
SF	252	TG-1	22-May-98	Calcium	7490		7,490	ug/l	7,490	ug/l	34.538	
SF	252	TG-1	22-May-98	Magnesium	3900		3,900	ug/l	3,900	ug/l		
SF	256	SF256	7-Nov-97	Hardness	36,000		35,000	ug/l	35,000	ug/l	39.844	
SF	256	SF256	7-Nov-97	Calcium	19000		19,000	ug/l	19,000	ug/l		
SF	256	SF256	7-May-98	Magnesium	5890		5,890	ug/l	5,890	ug/l		
SF	256	SF256	7-May-98	Calcium	16200		15,200	ug/l	15,200	ug/l	57.474	
SF	265	SF265	5-Nov-97	Calcium	12800		12,800	ug/l	12,800	ug/l	48.099	
SF	265	SF265	5-Nov-97	Magnesium	4040		4,040	ug/l	4,040	ug/l		
SF	265	SF265	9-May-98	Calcium	14000		14,000	ug/l	14,000	ug/l	54.148	
SF	265	SF265	9-May-98	Magnesium	4,880		4,880	ug/l	4,880	ug/l	51.123	
SF	266	MG-1	5-Nov-97	Calcium	5750		5,750	ug/l	5,750	ug/l	23.706	
SF	266	MG-1	5-Nov-97	Magnesium	2270		2,270	ug/l	2,270	ug/l		
SF	266	MG-1	5-May-98	Calcium	4080		4,080	ug/l	4,080	ug/l	16.653	
SF	266	MG-1	5-May-98	Magnesium	1570		1,570	ug/l	1,570	ug/l		
SF	266	MG-1	22-May-98	Calcium	3200		3,200	ug/l	3,200	ug/l	12.932	
SF	266	MG-1	22-May-98	Magnesium	1200		1,200	ug/l	1,200	ug/l		
SF	266	MG-1	22-May-98	Hardness	13,000		13,000	ug/l	13,000	ug/l	16.573	
SF	267	SF267	5-Nov-97	Calcium	13800		13,800	ug/l	13,800	ug/l		
SF	267	SF267	5-Nov-97	Magnesium	4510		4,510	ug/l	4,510	ug/l		
SF	267	SF267	9-May-98	Calcium	5530		5,530	ug/l	5,530	ug/l	21.097	
SF	267	SF267	9-May-98	Magnesium	1770		1,770	ug/l	1,770	ug/l		
SF	267	SF267	23-May-98	Calcium	4300		4,300	ug/l	4,300	ug/l	16.502	
SF	267	SF267	23-May-98	Magnesium	1400		1,400	ug/l	1,400	ug/l		
SF	267	SF267	23-May-98	Hardness	16,000		16,000	ug/l	16,000	ug/l	26.658	
SF	269	SF269	5-Nov-97	Calcium	7670		7,670	ug/l	7,670	ug/l		
SF	269	SF269	5-Nov-97	Magnesium	3770		3,770	ug/l	3,770	ug/l	34.677	
PC	306	PC306	13-Nov-97	Calcium	2360		2,360	ug/l	2,360	ug/l	34.639	
PC	306	PC306	13-Nov-97	Magnesium	674		674	ug/l	674	ug/l		
PC	306	PC306	16-May-98	Calcium	2030	J	2,030	ug/l	2,030	ug/l	7.350	
PC	306	PC306	16-May-98	Magnesium	564	J	564	ug/l	564	ug/l		
PC	306	PC306	23-May-98	Calcium	1300		1,300	ug/l	1,300	ug/l	4.729	
PC	306	PC306	23-May-98	Magnesium	380		380	ug/l	380	ug/l		
PC	306	PC306	23-May-98	Hardness	5,000		5,000	ug/l	5,000	ug/l	5.000	
PC	309	PC309	12-Nov-97	Calcium	1,820		1,820	ug/l	1,820	ug/l		
PC	309	PC309	12-Nov-97	Magnesium	595		595	ug/l	595	ug/l	6.985	
PC	309	PC309	15-May-98	Calcium	1,470		1,470	ug/l	1,470	ug/l	5.493	
PC	309	PC309	15-May-98	Magnesium	428		428	ug/l	428	ug/l		
PC	311	PC311	12-Nov-97	Calcium	2150		2,150	ug/l	2,150	ug/l	6.008	
PC	311	PC311	12-Nov-97	Magnesium	641		641	ug/l	641	ug/l		
PC	311	PC311	14-May-98	Calcium	1,580		1,580	ug/l	1,580	ug/l	5.887	
PC	311	PC311	14-May-98	Magnesium	474		474	ug/l	474	ug/l		
PC	311	PC311	23-May-98	Calcium	1,500		1,500	ug/l	1,500	ug/l	6.567	
PC	311	PC311	23-May-98	Magnesium	440		440	ug/l	440	ug/l		
PC	311	PC311	23-May-98	Hardness	6,000		6,000	ug/l	6,000	ug/l		
PC	325	PC325	17-May-98	Calcium	4,000	J	4,000	ug/l	4,000	ug/l		
PC	325	PC325	17-May-98	Magnesium	1,670	J	1,670	ug/l	1,670	ug/l	16.565	

Derived and Measured Hardness

Site ID	Location ID	XReference	Sample Date	Analyte	Value	Qualifier	Revised Value	Unit	Revised Value	Unit	Hardness (derived* and measured)	Average Hardness
											Pine Creek averages:	8,970

* Standard Method 2340B where: hardness (mg/l) = 2.497*[Ca++]+4.118[Mg++]

Upper South Fork CDA River and Tributaries (SF stations 202-231, NM stations, and CC sta

Median:	26.950
25th percentile:	8.680
75th percentile:	47.632
95th percentile:	115.014

Page-Galena Mineral Belt (SF Stations other than ones identified for the Upper South Fork

Median:	39.972
25th percentile:	32.994
75th percentile:	58.108
95th percentile:	77.443

Pine Creek Drainage

Median:	6.401
25th percentile:	6.328
75th percentile:	9.044
95th percentile:	15.301

Entire South Fork CDA Basin

Median:	26.950
25th percentile:	7.504
75th percentile:	52.870
95th percentile:	111.257